

# PARTS LIST

HORIZONTAL MACHINING CENTER

KH-45/KH-4500

***KIWA MACHINERY CO., LTD.***

**INDEX (KH-45/KH-4500)**

21-11

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**Spindle Head 1/2**

**DRAWING NO. AH450001A1**

No.		Q'TY	CODE/TYPE	VER.	REMARKS
1	Spindle Head (casting)	1	P00003	D	FC300
	Spindle Head (machining)	1	P00003	L2	
	Spindle Head (machining) (axis extension)	1	P00B43	A0	
2	Centering Ring (Spindle Head Side) (casting)	1	P00043	A0	FC300
	Centering Ring (Spindle Head Side) (machining)	1	P00043	C	
3	Spindle Head Top Cover	1	P00177	C	SS400
4	Sensor Stay	1	P00038	D2	SS400
5	Sensor Dog	1	P00397	E0	SS400
6	Drawing Bar	1	P00023	D	SCM415
7	Clamp Plug	1	P00026	B	SCM415
8	Piston	1	P00027	A	S45C
9	Belleville Spring Stopper Collar	1	P00028	A	ALBC2
10	Belleville Spring Adjustment Collar	1	P00029	B	S45C
11	Joint Sleeve	1	P00030	A	S45C
12	Joint Rod	1	P00031	D	SCM435
13	Flange	1	P00032	D	SS400
14	Coolant Joint	1	P00033	A	S45C
15	Push Rod	1	P00034	C2	SNCM220
16	Dog Bar	1	P00036	B	S45C
17	Unclamp Cylinder	1	P00039	D1	S45C
18	Unclamp Cylinder Cover	1	P00040	F0	S45C
19	Unclamp Piston	1	P00041	D0	S45C
20	Cylinder Spacer	1	P00042	B	SS400
21	Centering Ring (Motor Side) (casting)	1	P00044	A	FC300
	Centering Ring (Motor Side) (machining)	1	P00044	F1	
22	Actuator	1	P00119	B	S45C
23	Socket Adjustment Collar	1	P00385	A	S50C
24	Push Ring	1	P01014	A	SCM415
25	Belleville Spring Stopper Nut	1	P01015	A	SCM435
26	Collet	1	P00C15	A0	
27	Collet Spring	1	ABAA114	A	SUS304-WPB
28	Stopper Plate	1	P00037	D0	SS400
29	Coolant Nozzle Base	1	P00961	A	SS400

**Spindle Head 1/2**

**DRAWING NO. AH450001A1**

<b>No.</b>		<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
29	Coolant Nozzle Base (axis extension)	1	P00B88	A0	SS400
	Coolant Nozzle Base (HSK)	1	P0AD002	A	S45C
30	Rotation Nozzle	6	SNA4		IKO
31	Spindle	1	K91KW277		KOYO
	Spindle (20,000 min <sup>-1</sup> ) (HSK)	1	K91KW596		KOYO
32	Coupling (10,000 min <sup>-1</sup> )	1	M561324		KTR
33	Belleville Spring	1	7000-00729-R1		TOKAI BANE
34	Sheet for Belleville Spring	2	7000-00783-R0		TOKAI BANE
35	Seal	1	KWM-1918-140		SKF
36	O-Ring	1	P7		NOK
37	O-Ring	2	P9		NOK
38	O-Ring	1	P16		NOK
39	O-Ring	1	P18		NOK
40	O-Ring	1	P24		NOK
41	Rod Seal	2	KWM-IW0346-340		SKF
42	O-Ring	2	P65		NOK
43	O-Ring	1	P135		NOK
44	O-Ring	2	P145		NOK
45	O-Ring	1	CO 1829A(AS568-259)		NOK
46	O-Ring	1	S7		NOK
47	O-Ring	2	G155		NOK
	O-Ring (HSK)	2	G200		NOK
48	O-Ring	1	G150		NOK
	O-Ring (HSK)	1	G160		NOK
49	C-Snap Ring for Shaft	1	S-8		OCHIAI
50	Bush	1	80B-1220		OILES
51	Spring Pin	1	φ5x32L		
52	Taper Pin with Female Thread	4	φ6x35L		
53	Proximity Sensor	2	FL7M-3J6HD		azbil



**Spindle Head 2/2****DRAWING NO. AH450002A2**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Spindle Motor (10000)	1	aiIT15/10000		FANUC
	Spindle Motor (12000,15000)	1	aiIT15/15000		
2	Distance Block	1	P00088	C3	AC4B
3	Rotary Joint Housing	1	P00087	C2	A5056
4	Rotary Joint	1	1124-300-345		DEUBLIN

**Spindle Head 1/2 (HSK)****DRAWING NO. A0AD001A**

NO.	DESCRIPTION	Q'TY		VER.	REMARKS
1	O-Ring	1	G160		
2	O-Ring	1	P20		
3	Coolant Nozzle Base	1	P0AD00	2A	S45C
4	Socket Head Cap Screw	6	M8 x 20		
5	Spindle (20,000 min <sup>-1</sup> )	1	K91KW596		KOYO
6	O-Ring	1	G200		

**Spindle Head 2/2 (HSK)**
**DRAWING NO. A0AD002B0**

NO.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Spindle Head	1	P0AD00	B0	FC300
2	O-Ring	1	P20		
3	Spindle Rear End Support	1	P0AD003	A	S45C (STKM13A)
4	Cylinder Base	1	P0AD004	C0	S45C (STKM16A)
5	Unclamping Amount Adjustment Shaft	1	P0AD008	B	S45C
6	Spindle Unclamping Sensor Stay	1	P0AD019	A	SS400
7	Unclamping Piston	1	P0AD006	B1	S45C
8	O-Ring	1	P105		
9	O-Ring	1	P115		
10	Unclamping Cylinder	1	P0AD005	A	S45C
11	O-Ring	1	G120		
12	O-Ring	1	P100		
13	Unclamp Cylinder Cover	1	P0AD007	A	S45C
14	Unclamp Dog	1	P05036	C	S45C
15	Lock Nut	1	MRZ50x1.5P		NIKKI
16	Tool Presence Sensor Stand	1	P05181	C0	SS400
17	#50 Rotary Joint Mounting Base	1	P05033	A	S45C
18	Rotary Joint Housing (Small)	1	P0AD010	B0	S45C
19	Rotary Joint Housing (Large)	1	P0AD009	A	S45C
20	Rotary Joint	1	ESX20-8834Y		RIX
21	Socket Head Cap Screw	6	M8 x 70		
22	Socket Head Cap Screw	6	M10 x 35		
23	Socket Head Cap Screw	6	M5 x 25		
24	Socket Head Cap Screw	4	M5 x 10		
25	Socket Head Cap Screw	4	M5 x 16		
26	Socket Head Cap Screw	4	M4 x 30		
27	Socket Head Cap Screw	8	M10 x 60		
28	Proximity Sensor	1	EH-108(Sensor) ES-M1P(Amp)		KEYENCE
29	Proximity Switch	1	FL7M-2J6HD		azbil
30	Socket Head Cap Screw	4	M5 x 16		
31	Taper Pin with Female Thread	2	φ10 x 55		
32	O-Ring	1	G200		

**Spindle Head 2/2 (HSK)****DRAWING NO. A0AD002B0**

<b>NO.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
33	Socket Head Cap Screw	2	M5 x 25		
34	Socket Head Cap Screw	4	M6 x 30		
35	Cushion Stopper	1	R0C0353	D	Urethane
36	Socket Head Cap Screw	4	M6 x 30		
37	Cushion Stopper	1	R0C0353	D	Urethane
38	Spindle (20,000 min <sup>-1</sup> )	1	K91KW596		KOYO

**X Axis 1/2****DRAWING NO. AH450003B1**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Bed (casting)	1	P00001	J0	FC300
	Bed (machining)	1	P00001	R0	
2	X Axis Linear Guide Spacer	4	P00923	B	SS400
3	X Axis Linear Guide Stopper	2	P00A55	A0	S45CD
4	X Axis Linear Guide	1	SRG45LC2SSC0E+1500LP - II		THK
	X Axis Linear Guide (axis extension)	1	SRG45LC2SSC0E+1530LP - II		
5	Needle Roller Pin	30	φ4.5x19.8		
6	Socket Flat Head Screw	30	M6x15		

**X Axis 2/2**

**DRAWING NO. AH450004A1**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Coupling Box (casting)	1	P00045	B	FC300
	Coupling Box (machining)	1	P02048	D3	
2	X Axis Bearing Housing (casting)	1	P00047	A	FC300
	X Axis Bearing Housing (1G)	1	P00414	B	
3	Bearing Collar	1	P00050	B	S45C
4	X Axis Bearing Stopper (for KH-45)	1	P00052	C	S45C
	#50 X Axis Bearing Stopper (for KH-4500)	1	P05039	A1	S45C
5	Collar	1	P00053	C0	S45C
6	X Axis Stopper Stay (1G)	1	P00472	A	SS400
7	Cushion Stopper	2	AAC0683	D0	Urethane
	Cushion Stopper (axis extension)	2	P00B41	A0	
8	Taper Pin with Female Thread	2	φ6x35		
9	AC Servo Motor	1	αiS22/4000		FANUC
10	Coupling	1	EAR18-35Cx35C-TK		TSUBAKI
11	Bearing 4 pcs/set	1	40TAB09FFBB/GL		NACHI
12	Bearing 3 pcs/set	1	35TAB07U/GM		NACHI
13	X Axis Ballscrew (for KH-45)	1	BA700720084-0		PMI
	X Axis Ballscrew (for KH-4500)	1	BA700720072-1		
	X Axis Ballscrew (axis extension)	1	BA700720105-0		
14	Lock Nut	2	MRZ35x1.5P		NIKKI
15	Bearing Nut	1	AN07		
16	Coupling Box Cover	1	P00957	B0	SS400
17	O-Ring	2	P38		
18	Lock Nut	1	MRZ40x1.5P		NIKKI
19	Collar (1G)	1	P00417	C0	S45C
20	Ballscrew RJ Housing (for KH-4500)	1	P05040	A	
21	Ballscrew RJ Base (for KH-4500)	1	P05041	B	
22	Ballscrew RJ Adjusting Spacer (for KH-4500)	1	P05042	B	
23	Rotary Joint (for KH-4500)	1	ES50-2000		RIX

## Y Axis 1/2

DRAWING NO. AH450005B1

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Column (casting)	1	P00002	P2	FC300
	Column (machining)	1	P00002	G2	
	Column (casting) (axis extension)	1	P00B42	A0	FC300
	Column (machining) (axis extension)	1	P00B42	A0	
2	X Axis Slide Cover Stay	4	P00178	C	SS400
3	Y Axis Linear Guide Spacer	4	P00925	B	SS400
4	Y Axis Linear Guide Stopper	2	P02049	A	S45CD
5	Y Axis Linear Guide	1set	SRG35R2SSC0E+1200LP-II		THK
	Y Axis Linear Guide (axis extension)	1set	SRG35R2SSC0E+1330LP-II		
6	Socket Flat Head Screw	30	M6x15		
7	Needle Roller Pin	30	φ4.5x19.8		

## Y Axis 2/2

DRAWING NO. AH450006B1

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Coupling Box (casting)	1	P00045	B	FC300
	Coupling Box (machining)	1	P02048	D3	
2	Y Axis Bearing Housing (casting)	1	P00047	A	FC300
	Y Axis Bearing Housing (machining)	1	P00416	B	
3	Bearing Collar	1	P00050	B	S45C
4	Y Axis Bearing Stopper	1	P00A51	B1	S45C
5	Collar	1	P00053	C0	S45C
6	Taper Pin with Female Thread	2	φ6x35		
7	AC Servo Motor	1	αiS22/4000 w/ Brake		FANUC
8	Coupling	1	EAR18-35Cx35C-TK		TSUBAKI
9	Bearing 4 pcs/set	1	40TAB09FFBB/GL		NACHI
10	Y Axis Ballscrew (for KH-45)	1	BA700720091-0		PMI
	Y Axis Ballscrew (for KH-4500)	1	BA700720090-0		
	Y Axis Ballscrew (axis extension)	1	BA700720106-0		
11	Bearing 3 pcs/set	1	35TAB07U/GM		NACHI
12	Lock Nut	1	MRZ35x1.5P		NIKKI
13	Oil Seal	1	SB406211		NOK
14	Cushion Stopper	2	R0C0353	D	Urethane
15	O-Ring	1	S120		NOK
16	O-Ring	1	G155		NOK
17	Y Axis Bearing Housing Cover	1	P00951	A	S45C
18	Socket Set Screw (flat tip)	1	M5x15		
19	Oil Seal	1	VR40A		NOK
20	Parallel Pin	1	MSTH10-15		MISUMI
21	Lock Nut	1	MRZ40x1.5P		NIKKI
22	Collar (1G)	1	P00417	B	S45C
23	Y Axis Ballscrew RJ Housing (for KH-4500)	1	P00A52	A0	S45C
24	Y Axis Ballscrew RJ Base (for KH-4500)	1	P00A53	A0	S45C
25	Ballscrew RJ Adjusting Spacer (for KH-4500)	1	P05042	B	SS400
26	Rotary Joint (for KH-4500)	1	ES50-2000		RIX



**Z Axis**

**DRAWING NO. AH450007A2**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Coupling Box (casting)	1	P00045	B	FC300
	Coupling Box (machining)	1	P02048	D3	
2	Z Axis Bearing Housing (casting)	1	P00047	A	FC300
	Z Axis Bearing Housing (machining)	1	P00415	B	
3	Bearing Collar	1	P00050	B	S45C
4	Collar	1	P00053	C0	S45C
5	Coupling Box Cover	1	P00957	B0	SS400
6	Cushion Stopper	1	AAC0683	D0	Urethane
7	Z axis Cushion Stopper	1	P00700	C0	Urethane
8	Z axis Support Block (for KH-45)	1	ACC0212	F2	FC300
	Z axis Support Block (for KH-4500)	1	P00A54	A0	
9	X axis Stopper Stay	1	P00174	B	S50C
10	Bearing Stopper (for KH-45)	1	ABC0213	A3	S50C
	#50 Bearing Stopper (for KH-4500)	1	P05039	A1	S45C
11	Rotary Table (for KH-45)	1	RTH-425,AA		TSUDAKOMA
	Rotary Table (for KH-4500)	1	RTH-423,AA		TSUDAKOMA
12	Z Axis Linear Guide	1set	SRG45R2SSC0E+1430LP-II		THK
13	Z Axis Linear Guide Spacer	4	P00924	B	SS400
14	AC Servo Motor	1	aiS22/4000		FANUC
15	Bearing 4 pcs/set	1	40TAB09FFBB/GL		NACHI
16	Z Axis Ballscrew (for KH-45)	1	BA700720086-0		PMI
	Z Axis Ballscrew (for KH-4500)	1	BA700720071-1		
17	Bearing 3 pcs/set	1	35TAB07U/GM		NACHI
18	Coupling	1	EAR18-35Cx35C-TK		TSUBAKI
19	Lock Nut	1	MRZ35x1.5P		NIKKI
20	Bearing Nut	1	AN07		
21	Taper Pin	2	φ6x35		
22	Oil Seal	1	SB406211		NOK
23	Oil Seal	1	SC457210		NOK
24	O-Ring	2	P38		NOK
25	Z Axis Pretension Block Cover (KH-45)	1	P00A31	A0	SS400
26	Socket Flat Head Screw	26	M6x15		
27	Needle Roller Pin	26	φ4.5x19.8		

**Z Axis****DRAWING NO. AH450007A2**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
28	Taper Pin	2	φ10x40		
29	Z Axis Linear Stopper	1	P00176	B	SS400
30	Rotary Table Side Cover (Right) (KH-45)	1	P00179	E	SS400
	Rotary Table Side Cover (Right) (KH-4500)	1	P00A91	A0	SS400
31	Rotary Table Side Cover (Left) (KH-45)	1	P00180	C	SS400
	Rotary Table Side Cover (Left) (KH-4500)	1	P00A92	A0	SS400
32	Bed Right Cable Rest	4	P00A32	A1	SS400
33	Lock Nut	1	MRZ40x1.5P		NIKKI
34	Collar (1G)	1	P00417	B	S45C
35	Ballscrew RJ Housing (for KH-4500)	1	P05040	A	
36	Ballscrew RJ Base (for KH-4500)	1	P05041	B	
37	Ballscrew RJ Adjusting Spacer (for KH-4500)	1	P05042	B	
38	Rotary Joint (for KH-4500)	1	ES50-2000		RIX
39	Z Axis Support Side Water Exclusion Roof	1	P00A07	A3	SS400

APC (Top View)

DRAWING NO. AH450008B0

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Rotation Stand (casting)	1	P00004	E	FC300
	Rotation Stand (machining)	1	P00004	N1	
2	Pallet Changing Arm (casting)	1	P00005	C	FC300
	Pallet Changing Arm (machining)	1	P00005	N1	
3	Pallet (casting)	2	P00008	E	FC300
	Pallet (machining)	2	P00008	M	
4	Lifting Block	4	P00140	B0	S45CD
5	Lifting Pin	4	P00A44	A1	SCM415
6	APC Lower Sensor Stay	1	P00143	D0	SS400
7	Index Block	2	P00403	B	S45CD
8	APC Lower Sensor Dog	2	P00407	A	SS400
9	Position Sensor Stay	1	P00564	A	SS400
10	Position Sensor Dog	1	P00565	A	SS400
11	Adjusting Screw	1	P00824	A	
12	APC Arm Fall Prevention Pin	1	P00A43	A0	S45C
13	Lifting Block Spacer	4	P00A45	A1	SS400
14	Hexagon Nut	1	M24		
15	Spring Washer	1	M24		
16	Needle Bearing Inner Ring w/additional work	2	P02400	A	
17	Rotation Stopper	1	ACD0253	A	S45C
18	Edge Locator	2	R0D0303	G	S50CN
19	Edge Locator	2	R0D0314	G	S50CN
20	Screw with Positioning Nose	1	MSSG10-35		MISUMI
21	Hinge Pin	1	CCGH8-80.3		MISUMI
22	Hydraulic Cylinder	1	70H-8R2FA63BB238- ABAJ4-X		TAIYO
23	Proximity Sensor	2	FL7M-3J6HD		azbil

## APC (Side View)

DRAWING NO. AH450009B0

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Waiting Pallet Base (casting)	1	P00006	A	FC300
	Waiting Pallet Base (machining)	1	P00006	E	
2	Waiting Pallet Bracket (casting)	1	P00007	C	FC300
	Waiting Pallet Bracket (machining)	1	P00007	C	
3	APC Rotation Shaft	1	P00110	F	S55C
4	APC Rack	1	P00111	E2	SCM435
5	APC Pinion	1	P00112	B1	SCM435
6	Arm Plate	1	P00113	D	S45C
7	Rotation Supporter	1	P00114	D	S45C
8	Up/down Cylinder	1	P00A41	A1	S55C
9	Up/down Cylinder Cover	1	P00117	C	S45C
10	Up/down Piston	1	P00400	A	S45C
11	APC Upper Sensor Stay	1	P00A46	A1	SS400
12	APC Positioning Pin	1	P00A42	A1	S45C
13	Location Pin	4	P00148	B	S45C
14	Handle	1	P00401	C	S45C
15	Index Pin	1	P00402	E	SCM435
16	Spring Stopper Plate	1	P00404	A	SS400
17	Pallet Stabilizer Pin	4	P00672	A	S45C
18	Needle Bearing Inner Ring w/additional work	2	P02400	A	
19	Positioning Key	3	Q0E1534	A	S45C
20	APC Indexing Rubber	1	P02231	B0	NBR
21	Bearing	1	6018ZZ		NSK
22	Bearing	1	6916ZZ		NSK
23	OILES #500SP Bush	2	SPB-557050		OILES
24	OILES #500SP Bush	2	SPB-506050		OILES
25	OILES #500SP Bush	1	SPB-202820		OILES
26	OILES Dry Met ST Bush	1	70B-2530		OILES
27	Index Pin Bush	1	JBAM20-16		MISUMI
28	Screw with Positioning Nose	1	MSSG10-40		MISUMI
29	Spring	1	SWL10-15		MISUMI
30	O-Ring	1	P120		NOK
31	O-Ring	1	S10		NOK

## APC (Side View)

DRAWING NO. AH450009B0

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
32	O-Ring	1	S85		NOK
33	O-Ring	1	AS568-164		NOK
34	Rotary Seal	1	KWM-1881-550		ECONOMOS
35	Rotary Seal	1	KWM-1881-800		ECONOMOS
36	Compression Spring	1	11-1358		SAWANE SPRING
37	C-Snap Ring for Shaft	1	S-80		
38	C-Snap Ring for Shaft	1	S-90		
39	Parallel Pin with Female Thread	4	φ10x30		
40	Steel Ball	1	φ6.5		
41	Steel Ball	1	φ3/8		
42	Socket Set Screw with Cup Point	1	M8x8		
43	Socket Set Screw with Cup Point	2	M10x45		
44	Socket Set Screw with Cup Point	1	M12x25		
45	Socket Set Screw with Cup Point	1	M12x30		
46	Lever Ball	1	KRM-CS404		KYOWA
47	Proximity Sensor	1	FL7M-3J6HD		azbil

**Pallet Clamping Unit****DRAWING NO. AH450010A0**

<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
1	Taper Clamp	4	P00015	E	SUJ2
2	Piston	4	P00016	B	S55C
3	Lock Bar	4	P00017	D	SUJ2
4	Taper Block	8	P00018	C	SUJ2
5	Cap	4	P00019	B	S45C
6	Spacer	8	P00020	B	S45C
7	Belleville Springs	36	MC-J-60		TOKAI BANE
8	Steel Ball	16	φ9/32(φ7.144)		
9	Rod Seal S01-P	4	KWM1908-660		ECONOMOS
10	O-Ring	4	AS568-149		NOK
11	O-Ring	8	P15		NOK
12	O-Ring	4	P5		NOK
13	C-Snap Ring for Holes	4	R-24		

**Double Arm**

**DRAWING NO. B-AM41400000-R1**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Arm Body	1	B-AM41400013		
2	Lock Pin	2	B-AM41400052		
3	Lock Spring	2	B-AM41400060		
4	Lock Cap	2	B-AM41400041		
5	Dust Seal	2	D10 x d6 x t3		
6	Clamp Bar Pin	2	B-AM41400131		
7	E-Ring	2	E7		
8	DU Bush	2	D20 x d18 x t10		
9	Dust Seal	2	D24 x d18 x t3		
10	Gripper (BT)	2	B-AM41400021		
	Gripper (CAT)	2	B-AM41400100		
	Gripper (HSK)	2	B-AM41400160		
11	Stopper Key (BT)	2	B-AM41400080		
	Stopper Key (CAT)	2	B-AM41400352		
	Stopper Key (HSK)	2	B-AM41400170		
12	Clamp Bar	2	B-AM41400035		
13	Clamp Bar Spring	2	B-AM41400190		
14	Clamp Bar Shaft	2	B-AM41400121		
15	Clamp Bar Spacer	2	B-AM41400141		
16	Positioning Pin	4	φ8 x 25L		
17	Socket Head Cap Screw	8	M8 x 16		
18	Socket Head Cap Screw	6	M5 x 40		
19	Flat Head Screw	2	M5 x 10		

**ATC Unit**

**DRAWING NO. AH450012B2**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	ATC Unit Base (casting)	1	P00009	C	FC300
	ATC Unit Base (machining)	1	P00009	D1	
2	ATC Unit (for GIZIN)	1	GAJF90XB11		GIZIN
	ATC Unit (for OTSUKA)	1	C39969△2		OTSUKA
3	ATC Unit Motor (for GIZIN)	1	β8-3000is		FANUC
	ATC Unit Motor (for OTSUKA)	1	OD L42658-01		FUJI ELECTRIC
4	ATC Unit Spacer (for GIZIN)	1	P00C37	A2	SS400D
12	ATC Unit Column Positioning Plate	1	P00101	B	SS400
13	ATC Unit Column Cover	1	P00100	C	SS400
14	Hexagon Head Screw	1	M8x20		
15	Socket Set Screw (flat tip)	1	M8x20		
16	Socket Button Head Screw	2	M8x15		
17	Slide Base Positioning Bolt	1	P00418	B	SCM435
18	Hexagon Nut	1	KNTR8		MISUMI
19	Parallel Pin (for GIZIN)	2	φ10x20 h7		
20	Double Arm (BT40)	1	B-KWARM400		COYO
	Double Arm (CAT40)	1	B-KWARM401		
	Double Arm (HSK40)	1	B-KWARM402		
21	Dust Seal	2	DSPB 65 80.1 6.1		NOK
22	Parallel Pin	2	Φ8x20		
23	OILES Bush	1	CBB-658040		OILES
24	Case	1	P00C40	A2	S45C
25	sleeve	1	P00C41	A0	SS400
26	Power Lock	1	PL040X065AE		TSUBAKI
27	Mesh cover for sleeve	1	P00C43	A2	SS400 black



**ATC Shutter**

**DRAWING NO. AH450016A1**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	High-Power Cylinder	1	RHCB32-700		SMC
2	Proximity Sensor	2	FL7M-4J6HD		azbil
4	Floating Joint	1	P02350	A2	S45C
5	ATC Shutter Stay	1	P00790	D	SS400
6	Lock Nut	1	SOR-32		SMC
7	Socket Set Screw with Cup Point	1	M6x8		
8	Shutter Cylinder Stay	1	P00B17	A0	SS400
9	ATC Shutter Base (ST OTSUKA)	1	P00255	M1	SS400
	ATC Shutter Base (axis extension OTSUKA)	1	P00B73	A0	SS400
	ATC Shutter Base (ST GIZIN)	1	P00C32	A0	SS400
	ATC Shutter Base (axis extension GIZIN)	1	P00D14	A0	SS400
10	ATC Shutter (ATC Unit OTSUKA)	1	P00300	H1	SS400
	ATC Shutter (ATC Unit GIZIN)	1	P00C35	A0	SS400
11	Shutter Cylinder Base (ATC Unit OTSUKA)	1	P00307	G0	SS400
	Shutter Cylinder Base (ATC Unit GIZIN)	1	P00C36	A0	SS400
12	Shutter Cylinder Stay (φ32)	1	P00341	E0	SS400
13	Shutter Bottom Proximity Sensor Base	1	P00927	A1	SS400
14	Shutter Upper Proximity Sensor Base	1	P00928	A1	SS400

**Tool Pot Slide (Magazine Side)**
**DRAWING NO. AH450013-1A0**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Tool Pot Slide Base (casting)	1	P00831	A	FC300
	Tool Pot Slide Base (machining)	1	P00831	A	
2	Base Plate	1	P00061	E	SS400
3	Clamp Block	1	P00425	B	S50C
4	Slide Cylinder Stay A	1	P00066	C	SS400
5	Slide Cylinder Stay B	1	P00067	A	SS400
6	Positioning Shaft	1	P00068	B	S50C
7	Clamp Plate	1	P00069	A	S45C
8	Clamp Support Block	1	P00070	A	S45C
9	Base Plate Key	2	P00424	C	S45C
10	Positioning Key	1	Q0E1534	A	S45C
11	Collar	1	P00832	A	S50C
12	Hydraulic Cylinder	1	100Z-1R-1SD32B141-AJ2-X/N		TAIYO
13	Linear Guide	1	SBI20SLL-1-K1-240-N		SBC
14	Coil Spring	2	4x20.7x35.3x4x6		TOKAI BANE
15	OILES #500SP Bush	2	SPB-121830		OILES
16	Shaft	2	SFJ12-115-WFC7-A4-E5		MISUMI
17	Stop Pin	1	STMH18		MISUMI
18	Socket Set Screw with Cup Point	4	M6x10		

**Tool Pot Slide (ATC Unit Side)****DRAWING NO. AH450013-2A0**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Positioning Base Plate	1	P00088	C3	SS400
2	Pot Slide Guide Bar	2	P02019	D1	SS400
3	Positioning Block	1	P00085	C	S45C
4	Positioning Plate	2	P00071	C	S45C
5	Pot Slide Guide	2	P02026	G0	SS400
6	Parallel Pin	2	φ10x20 h7		
7	Spring Pin	2	φ6x22		

**ATC Magazine (40Tools)**
**DRAWING NO. AH450014A1-R1**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	ATC 40 Frame (casting)	1	P0001	E	FC300
	ATC 40 Frame (machining)	1	P00010	J3	
2	Idle Pulley (casting)	1	P00014	A	FC300
	Idle Pulley (machining)	1	P00014	A	
3	Magazine Drive Sprocket	1	P00059	A	S45C
4	Chain Guide Bar (Right) (casting)	1	P00073	A	FC300
	Chain Guide Bar (Right) (machining)	1	P00073	B	
5	Chain Pot Guide L367	2	P00075	B	UHMW-PE
6	Chain Pot Guide Bar L880	1	P00076	B	SS400
7	Sprocket Joint Plate	1	P00078	A	S45C
8	Tension Block	1	P00828	A	S45C
9	Idle Pulley Collar	1set	P00086	A	STKM16
10	Deceleration Unit Spacer	1	P00421	A	SS400
11	Chain Pot Corner Guide	2	P00826	A	SS400
12	Chain Support Shaft	1	AAE6122	C	SS400
13	Worm Deceleration Unit (MAB80L60NT)	1	NA3K-W139122		MAKISHINKO
14	Servo Motor	1	βS12/3000		FANUC
15	Tool Pot	40	CP40J2202-1		COYO
16	Bearing	2	6912ZZ		NSK
17	C-Snap Ring for Shaft	1	S-60		
18	Bolt	2	P00829	A	
19	ATC Joint Bracket	1	P00825	A	SS400
20	Chain Guide L250C	1	ABE0563	A	MC Nylon
21	Chain Support Stay	1	P00914	A	SS400
22	Frame Reinforcement Stay	1	P00104	C	SS400
23	Hexagon Head Screw (threaded all the way)	1	M12x150		
24	Hydraulic Block Terminal	1	BTLSN2-22		MISUMI

**ATC Magazine (60Tools)**

**DRAWING NO. AH450015A1-R1**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	ATC 40 Frame (casting)	1	P00010	E	FC300
	ATC 40 Frame (machining)	1	P00010	J1	
2	ATC 60 Frame (casting)	1	P00011	D	FC300
	ATC 60 Frame (machining)	1	P00011	E	
3	Idle Pulley (casting)	1	P00014	A	FC300
	Idle Pulley (machining)	1	P00014	A	
4	Magazine Drive Sprocket	1	P00059	A	S45C
5	Chain Guide Bar (Right) (casting)	1	P00073	A	FC300
	Chain Guide Bar (Right) (machining)	1	P00073	B	
6	Chain Pot Guide L367	2	P00075	B	UHMW-PE
7	Chain Pot Guide Bar L880	1	P00076	B	SS400
8	Chain Pot Guide Bar L720	2	P00077	B	SS400
9	Sprocket Joint Plate	1	P00078	A	S45C
10	Tension Block	1	P00828	A	S45C
11	Idle Pulley Collar	1set	P00086	A	STKM16
12	Column Positioning Key	2	Q0E1534	A	S45C
13	Deceleration Unit Spacer	1	P00421	A	SS400
14	Chain Pot Corner Guide	2	P00826	A	SS400
15	Chain Support Shaft	1	AAE6122	C	SS400
16	Worm Deceleration Unit (MAB80L60NT)	1	NA3K-W139122		MAKISHINKO
17	Servo Motor	1	βiS12/3000		FANUC
18	Tool Pot	60	CP40J2202-1		COYO
19	Bearing	2	6912ZZ		NSK
20	C-Snap Ring for Shaft	1	S-60		
21	Bolt	2	P00829	A	
22	ATC Joint Bracket	1	P00825	A	SS400
23	Chain Guide L250C	2	ABE0563	A	MC Nylon
24	Chain Support Stay	2	P00914	A	SS400
25	Frame Reinforcement Stay	1	P00104	C	SS400
26	Hexagon Head Screw (threaded all the way)	1	M12x150		
27	Hydraulic Block Terminal	1	BTLSN2-22		MISUMI

**Pot Index Mechanism (Top View)**

**DRAWING NO. AH450017A2**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Chain Guide B (casting)	1	P00098	B	FC300
	Chain Guide B (machining)	1	P00089	B	
2	Pot Base Shaft	1	P00092	B	S55C
3	Link	1	P00093	B	S45C
4	Linear Block	1	P00094	A	S50C
5	Index Cylinder Stay	1	P00095	B	SS400
6	Slide Shaft Bracket	1	P00096	A	S45C
7	Pot Stopper Ring	1	P00097	A	S45C
8	Chain Guide A (casting)	1	P00098	B	FC300
	Chain Guide A (machining)	1	P00098	B	
9	Pot Base Collar	1	P00103	B	SS400D
10	Key (BT/CAT)	1	AAE5374	D	S50C
11	Pot Base Positioning Bolt	1	P00480	A	SCM435
12	Hydraulic Cylinder	1	100Z-1R-1SD-20B110-AJ2		TAIYO
13	OILES Dry Met ST Bush	4	70B-1220		OILES
14	OILES #500SP Thrust Washer	1	SPW-4007		OILES
15	Cam Follower	1	KRV19X/3AS		NTN
16	Linear Shaft	2	SFAG12-210-F10-P10-M5-FC7-E2		MISUMI
17	Socket Set Screw with Cup Point	1	M6x6		
18	Socket Set Screw with Cup Point	2	M6x20		

**Pot Index Mechanism (Side View)**

**DRAWING NO. AH450018B0**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Index Base (casting)	1	P00012	B	FC300
	Index Base (machining)	1	P00012	F0	
2	Pot Base (casting)	1	P00013	B	FC300
	Pot Base (machining)	1	P00013	B1	
3	ATC Unit Column Positioning Plate	1	P00101	B	SS400
4	Tool Stocker Pot (BT, CAT)	1	KI-040802-02-1		KUSHIDA
	Tool Stocker Pot (HSK)	1	CP40H2071		COYO
5	Chain Guide D	1	P00409	B	MC Nylon
6	Chain Guide C	1	P00408	B	SS400D
7	Index Base Adjuster	1	P00410	A	SS400D
8	Index Positioning Bolt	1	P00411	A1	SCM435
9	Tool Sensor Stay L80	3	P00853	B	SS400
10	Chain Guide Spacer t3.2	1	P00884	A	SS400
11	Stop Pin	2	STMH18		MISUMI
12	Spring Pin	2	φ8x50		
13	Socket Set Screw (flat tip)	1	M12x40		
14	Socket Button Head Screw	2	M8x15		
15	Hexagon Head Screw	1	M8x20		
16	Socket Set Screw (flat tip)	1	M8x20		

**ATC Single Arm**

**DRAWING NO. AH450019A2**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Single Arm Base (casting)	1	P00120	B	FC300
	Single Arm Base (machining)	1	P00120	C	
2	Single Arm Base plate	1	P00638	C	S50CN
3	Single Arm Gripper (Lower) (BT)	1	P00644	B	SCM415
	Single Arm Gripper (Lower) (CAT)	1	P00639	B	
	Single Arm Gripper (Lower) (HSK)	1	P0AD028	B0	
4	Single Arm Gripper (Upper) (BT)	1	P00645	B	SCM415
	Single Arm Gripper (Upper) (CAT)	1	P00640	B	
	Single Arm Gripper (Upper) (HSK)	1	P0AD029	B0	
5	Single Arm Key	2	P00132	B	SK4
6	Gripper Shaft	2	AAE5474	C	ABB2
7	In/out Cylinder Fixing Plate	1	P00134	B	SS400
8	Connection Plate	1	P00135	B	SS400D
9	In/out Slide Shaft	2	P00125	A	S45CD
10	Chain Guide (Single Arm Side)	1	P00090	D	FC300
11	Chain Guide Spacer L35C	2	P00154	A	S45C
12	Dual Cylinder Stay	1	P00670	B	SS400
13	Lock Cam Slide Bar	2	P00642	A	S45C
14	Single Arm	1	P00669	A	S50C
15	Slide Shaft Bracket	4	AAE5624	C	S45C
16	Single Arm Slider	2	AAE5574	B	S45C
17	Slide Shaft	2	AAE5613	B	S45CD
18	Tool Sensor Stay L154	1	P00854	A	SS400
19	Gripper Lock Pin	4	AAE5504	B	S45C
20	Gripper Lock Cam	2	AAE5494	B	ABB2
21	Lock Cam Spring Cap	2	AAE5644	A	S45C
22	Gripper Lock Pin Nut	4	AAE5514	A	S45C
23	Spring Stopper	2	AAE5604	A	S45C
24	Lock Pin Bar	2	AAE5714	A	S45C
25	Eccentric Pin $\phi 20 \times 25L$	1	ABE0654	A	S45C
26	OILES #500SP Bush	4	SPB-303850		OILES
27	OILES #500SP Bush	4	SPB-253335		OILES
28	OILES Dry Met LF Washer	2	LFW-1215		OILES



**ATC Single Arm****DRAWING NO. AH450019A2**

<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
29	OILES Dry Met M Bush w/additional work	8	AAE5724	A	
30	Dual Cylinder (M10)	1	100Z-1R-1SD20B190-AJ3-X		TAIYO
31	Hydraulic Cylinder	1	100Z-1R-1SD20B110-AJ2		TAIYO
32	Stop Pin	1	STMH18		MISUMI
33	Stripper Bolt	2	MSB16-30		MISUMI
34	Lock Nut	4	LVN20		MISUMI
35	Leveling Bolt	4	LVB20-40		MISUMI
36	Compression Spring	2	WH10-70		MISUMI
37	Compression Spring	2	WH6-55		MISUMI
38	Socket Set Screw (flat tip)	1	M10x35		
39	Socket Set Screw with Cup Point	2	M10x20		
40	Socket Set Screw (flat tip)	4	M6x30		
41	Socket Set Screw (flat tip)	2	M5x50		
42	Parallel Pin	4	φ10x20		
43	Socket Head Cap Screw	8	M6x30		
44	Socket Head Cap Screw	4	M6x20		
45	Socket Flat Head Screw	8	M3x8		
46	Socket Set Screw with Cup Point	16	M5x8		

**Magazine Reduction Unit (ATC120)****DRAWING NO. AH450020A2**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Base Plate	1	P00107	C	S45CD
2	Reduction Unit RV-160E-145	1	55E020J00		NABTESCO
3	Sprocket Fixing Ring	1	P00109	B	S45CD
4	Socket Set Screw with Cup Point	2	M6x10		
5	O-Ring	1	AS568-265		NOK
6	O-Ring	1	G220		NOK
7	Oil Seal	1	SC19022015 (AC4975E4)		NOK
8	Motor Base	1	P00108	C	S55C
9	Oil Seal	1	SC50689 (AC2847E0)		NOK
10	Magazine Drive Sprocket	1	P00105	B	S45CD
11	Servo Motor	1	β12/3000is		FANUC
12	Magazine Motor Cover	1	P00557	A1	SS400

**Idle Pulley Unit****DRAWING NO. AH450021A**

<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
1	Idle Pulley (casting)	1	AAE6112	B	FC300
	Idle Pulley (machining)	1	AAE6102	C	
2	Chain Support Shaft	1	AAE612	2C	SS400
3	Bearing	2	6912ZZ		NSK
4	C-Snap Ring for Shaft	1	S-60		
5	Tension Block	1	P00082	A	S45CD
6	Hexagon Head Screw (threaded all the way)	1	M12x150		
7	Chain Support Shaft	1	ABE052		SS400

**ATC120 Frame****DRAWING NO. AH450022A2**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	ATC Frame Face (canning drawing)	1	P00168	J0	SS400
	ATC Frame Face (machining)	1	P00168	P1	
2	ATC Frame Backside (canning drawing)	1	P00169	K	SS400
3	ATC Frame Connection Steel A	1	P00170	D	SS400
4	ATC Frame Connection Steel B	1	P00171	E	SS400
5	ATC Frame Connection Steel C	1	P00172	B	SS400
6	ATC Frame Connection Steel D	1	P00173	D	SS400
7	ATC Frame Connection Steel E	1	P00562	D	SS400
8	ATC Frame Connection Spacer	10	P00058	B	STKM16
9	Socket Head Cap Screw	13	M12x105		
10	Socket Head Cap Screw	16	M12x115		
11	Socket Head Cap Screw	2	M16x125		
12	Socket Head Cap Screw	8	M16x130		
13	Hexagon Head Screw	2	M12x100		

**ATC120 Chain Guide and Tool Pot****DRAWING NO. AH450023B1**

<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
1	Chain Guide Spacer L35C	10	P00154	A	S45C
2	Chain Guide Spacer L54C	24	P00155	A	S45C
3	Chain Guide Spacer L70C	8	P00156	A	S45C
4	Chain Guide Bar L480	1	P00158	B	SS400D
5	Chain Guide L480	1	P00159	A	MC Nylon
6	Chain Guide Bar L730	1	P00160	B	SS400D
7	Chain Guide L730	1	P00161	A	MC Nylon
8	Chain Guide Bar 1	8	P00804	A	SS400D
9	Chain Guide 1	8	P00802	B	MC Nylon
10	Chain Guide Bar 3	15	P00808	A	SS400D
11	Chain Guide L250C	15	ABE0563	A	MC Nylon
12	Tool Pot	120	CP40J2203		COYO

**Coolant Tank****DRAWING NO. AH450024A**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Coolant Tank A	1	P00888	F0	SS400
2	Coolant Tank B	1	P00889	K1	SS400
3	Coolant Tank Cover A	1	P00890	B0	SS400
4	Coolant Tank Cover B	1	P00465	G	SS400
5	Coolant Tank Cover C	1	P00891	B	SS400
6	Coolant Tank Cover D	1	P00468	B	SS400
7	Coolant Tank Cover E	1	P00932	C	SS400
8	Pump Cleaning Cover	1	P00796	A	SS400
9	Coolant Tank Filter	2	P00892	A	SS400
10	Dummy Filter	1	P00893	A	SS400
11	Bucket	1	P00663	B	SS400
12	Gasket for Coolant Tank	1	P00895	A	V6500
13	Caster with Adjustable Foot	10	No,103AF-N		TOCHIGIYA
14	Oil Gauge	1	KL-100A		KYOWA
15	Coolant Pump	3	VKA246AQ		TERAL
16	Trochoid Pump	1	TOP-2MY-210HWMPVBE-2.0-15		NIPPON OIL PUMP
17	Suction Filter	1	KNF-08		KAMUI
18	Socket Head Cap Screw	8	M22x100		
19	Hexagon Nut	8	M22		
20	Spring Washer	16	M22		
21	Flat Washer	16	M22		

Pop-up Type MARPOSS

DRAWING NO. AH450025B0

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Stay (for KH-45)	1	P00A72	B0	S45CD
	Stay (for KH-4500)	1	P00B47	B0	
2	Base Plate	1	P00A73	A1	S50C
3	Cylinder Stay	1	P00390	C	S45C
4	Top Plate	1	P00A76	A0	S50C
5	Main Shaft	1	P00A77	A1	S45CD
6	Linear Guide	1	2SRS9MUUC1+185LM		THK
7	Main Cover (for KH-45)	1	P00A78	B0	SS400
	Main Cover (for KH-4500)	1	P00B49	B0	
8	Main Side Cover (for KH-45)	1	P00A79	B0	SS400
	Main Side Cover (for KH-4500)	1	P00C46	A0	
9	Top Cover	1	P00940	E0	SS400
10	Up/down Stay	1	P02333	B	SS400
11	Probe	1	3419825010		MARPOSS
12	Stylus	1	3191910887		MARPOSS
13	Dust Seal	1	DKH304269(AR1664G5)		NOK
14	Air Cylinder	1	CDM2BZ25-100AZ-A93Z		SMC
15	Tubing Joint	2	KQ2L-06-01S		SMC
16	Spring Hinge	1	TH-61B-1		TOCHIGIYA
17	Socket Head Cap Screw	4	M3x5		
18	Socket Head Cap Screw	9	M3x8		
19	Socket Head Cap Screw	4	M3x8		
20	Socket Head Cap Screw	8	M3x25		
21	Socket Head Cap Screw	4	M6x15		
22	Socket Head Cap Screw	2	M6x20		
23	Socket Head Cap Screw	4	M6x25		
24	Socket Button Head Screw	5	M5x6		
25	Socket Button Head Screw	2	M5x10		
26	Drive Shaft	1	P00A74	A1	
27	Drive Shaft Stay	1	P00A75	A2	
28	Bottom Cover	1	P00A80	A2	
29	Parallel Pin	2	φ6x20		

## 6APC

DRAWING NO. AH450028B0

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	6APC (casting)	1	P00481	E0	FC300
	6APC (machining)	1	P00481	H	
2	Up/down Sensor Stay	1	P00619	D0	SS400
3	Pallet Positioning Pin	1	P00507	E2	S50C
4	Roller Bearing Stopper (Lower)	1	P00504	A	S45C
5	Positioning Bush Housing	4	P00727	F	SCM435
6	Positioning Key Shaft Side	1	P00512	C	S45C
7	Positioning Key Deceleration Unit Side	1	P00511	D	S45C
8	Joint Plate	1	P00500	A	S45C
9	Deceleration Unit Fixing Plate	1	P00490	B	S45C
10	Gear Box (casting)	1	P00485	A	FC300
	Gear Box (machining)	1	P00485	B	
11	Gear Box Cover	1	P00488	C	S45C
12	Deceleration Unit Side Timing Pulley	1	P00486	A	S45C
13	Bearing Collar	1	P00493	A	STKM
14	Gear Box Bearing Stopper	1	P00491	A	S45CD
15	Rotation Motor Base Plate	1	P00489	C	SS400
16	Timing Pulley Motor Side	1	P00487	A	S45C
17	Pulley Plate	1	P00492	A	SS400D
18	Positioning Plate Deceleration Unit Side	1	P00501	E0	S45C
19	Positioning Plate Deceleration Shaft Side	1	P00502	C	SCM415
20	Location Pin	16	P00148	B	S45C
21	Pallet Stabilizer Pin	16	P00672	A	S45C
22	Pallet Base Plate	4	P00496	E1	S50C
23	Pallet Rotation Base (casting)	1	P00482	D	FC300
	Pallet Rotation Base (machining)	1	P00482	H3	
24	Roller Bearing Stopper (Upper)	1	P00503	A	S45C
25	Pallet 1 Rotation Signal Dog	4	P00620	A	S45CD
26	1 Rotation Signal Sensor Stay	2	P00C90	A0	SS400
27	Rotation Shaft Support	1	P00495	C2	S50C
28	Cylinder Base (casting)	1	P00484	B1	FC300
	Cylinder Base (machining)	1	P00484	F4	
29	Up/down Piston	1	P00497	A1	S50C



**6APC****DRAWING NO. AH450028B0**

<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
30	APC Rotation Shaft Cover	1	P00499	B	SCM415
31	Piston Fixing Plate	1	P00498	C1	S50C
32	APC Rotation Shaft	1	P00494	E2	S50C
33	Rotation Shaft Positioning Plate	1	P00506	C2	S45C
34	Up/down Sensor Dog Cover	1	P00618	E1	SS400
36	Lock Nut	1	MR160		NIKKI
37	Bearing	1	6008ZZ		NSK
38	Bearing	1	6009ZZ		NSK
39	Bearing	2	6030ZZ		NSK
40	Crossed Roller Bearing	1	CRB30040T1		IKO
41	Cyclone Deceleration Unit RV160E-171	1	55E044J00		NABTESCO
42	Servo Motor	1	β12/3000is		FANUC
43	Timing Belt	1	550-5GT-25		UNITTA
44	OILES #2000 Bush	1	CWP-28150		OILES
45	Dust Seal	1	LBH-210		NOK
46	Oil Seal	1	SC19022015(AC4975E4)		NOK
47	O-Ring	1	AS568-265		NOK
48	O-Ring	1	G220		NOK
49	O-Ring	1	P125		NOK
50	O-Ring	1	P115		NOK
51	O-Ring	1	P90		NOK
52	O-Ring	2	P14		NOK
53	Knock Pin	8	MSTP16-70		MISUMI
54	Parallel Key	1	KED12-25		MISUMI
55	Socket Head Cap Screw	16	M20x60		
56	Socket Head Cap Screw	16	M20x65		
57	Socket Set Screw with Cup Point	1	M5x15		
58	Socket Set Screw with Cup Point	2	M10x15		
59	Socket Set Screw (additional machining)	1	M10x30		
60	Proximity Sensor	1	FL7M-2J6HD		azbil
61	Proximity Sensor	2	FL7M-3J6HD		azbil

**Spiral Conveyor****DRAWING NO. NJ00001A**

No.	DESCRIPTION	Q'TY	CODE/TYPE	VER.	REMARKS
1	Shaft	1	P00C18	A1	S45C
2	Flange A	1	P00C19	A1	SS400
3	Seal Flange	1	P00C21	A1	SS400
4	Packing A	1	220x165x3T		NBR
5	Flange B	1	P00C20	A2	SS400
6	Oil Seal	1	SC45x62x9		NOK
7	Oil Seal	1	SB45x60x7		NOK
8	Ball Bearing	1	6008ZZ		
9	O-Ring	1	S110		NOK
10	Conveyor Washer	1	P00C22	A0	SS400
11	Plug	1	RC1		STD
12	Socket Head Cap Screw	1	M8x20		SCM3
13	Packing B	1	220x224x3T		NBR
14	Snap Ring	1	S-68		STD
15	Spring Washer	1	M8		STD
16	Geared Motor	1	GM-SF-0.2KW 1/60		
17	Socket Head Cap Screw	1	M10x12		SCM3
18	Spiral Coil for Operator Side	1	18xD100xP125-R		SCM3
	Spiral Coil for ATC Magazine Side	1	18xD100xP125-L		SCM3
19	Socket Head Cap Screw	4	M10x20		SCM3

**Front Door****DRAWING NO. AH450051A0**

<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
1	Front Door Left	1	P00250	G3	SS400
2	Front Door Right	1	P00249	G3	SS400
3	Front Door Top Left	1	P00807	C0	SS400
4	Front Door Top Right	1	P00806	C0	SS400
5	Front Door Window	2	P00302	A	Polycarbonate
6	Front Door Handle Bracket Left	1	P00976	A1	SUS304
7	Front Door Handle Bracket Right	1	P00996	A0	SUS304
8	Door Handle	2	DTW120143-00-0A		SHIBUTANI
9	Electromagnetic Door Lock	1	HS1L-DT44KMSR-R		iDEC
10	Rubber Foot	8	TM-TK-16		TOCHIGIYA
11	Roller	8	KWM-68		SHIBUTANI

**Operator Door****DRAWING NO. AH450052A0**

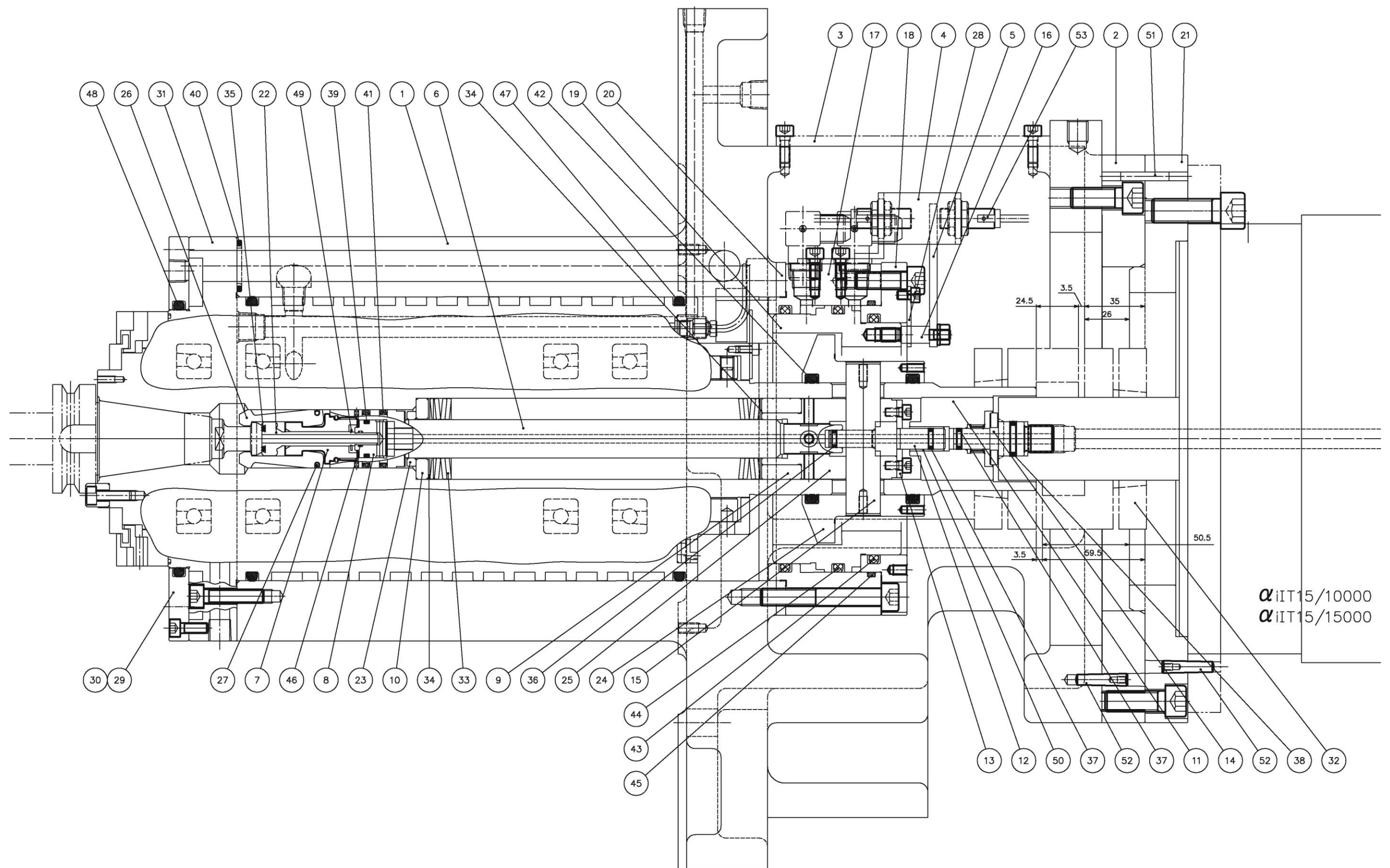
<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
1	Operator Door	1	P00B84	A1	SS400
2	Operator Door Top	1	P00B85	A1	SS400
3	Operator Door Top Window	1	P00935	A	Polycarbonate
4	Operator Door Handle Bracket	1	P00983	A2	SUS304
5	Door Handle	1	DTW120143-00-0A		SHIBUTANI
6	Electromagnetic Door Lock	1	HS1L-DT44KMSR-R		iDEC
7	Rubber Foot	2	TM-TK-16		TOCHIGIYA
8	Roller	4	KWM-68		SHIBUTANI
9	Impact-Resistant Window	1	LMT-A1 8x730x590		LAMINTON

**X/Y/Z Axis Cover****DRAWING NO. AH450053A0**

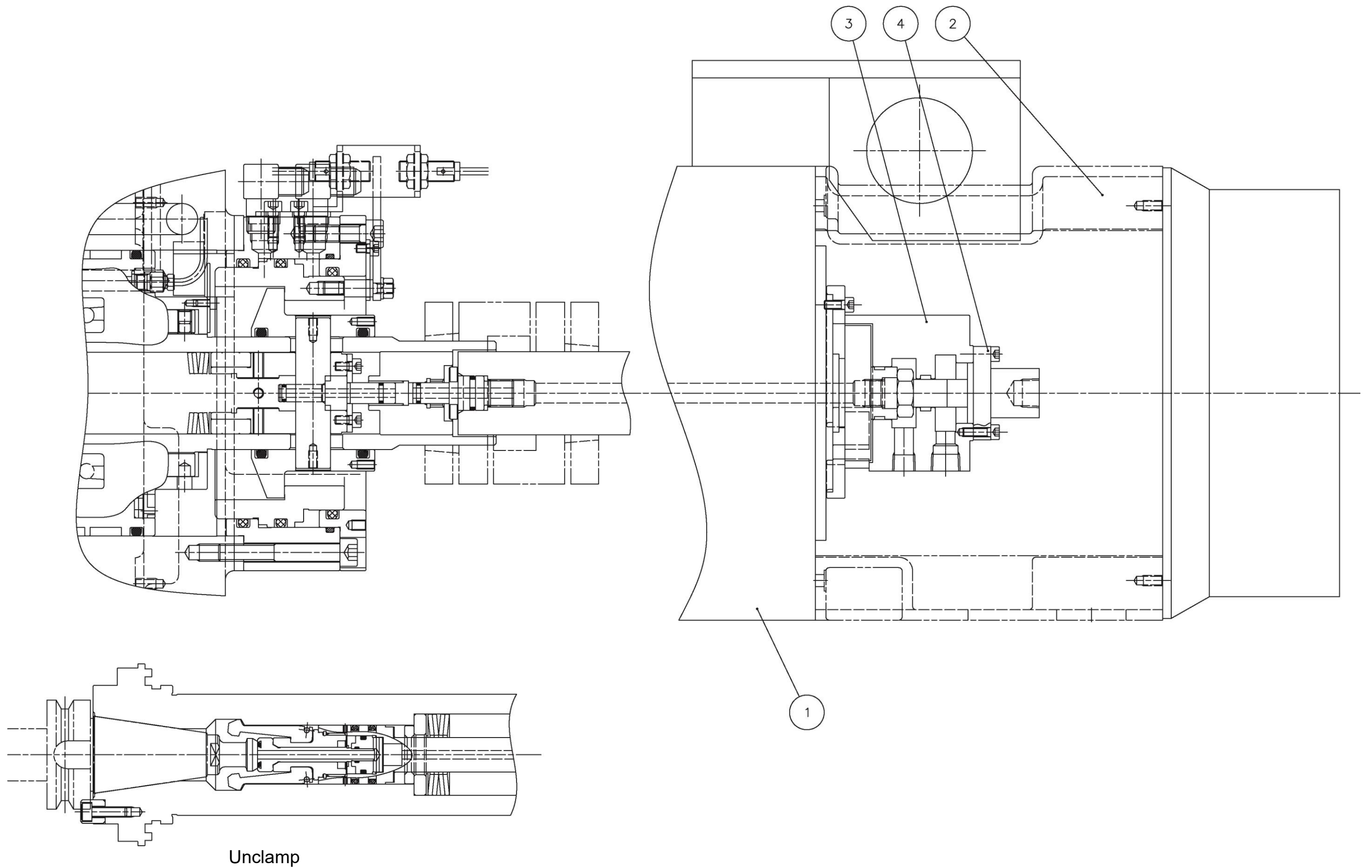
<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
1	Z Axis Slide Cover (moving side)	1	P00A83	A4	SS400
2	X Axis Telescopic Cover	1	3101-10		TOKYO SEIMITSU
3	Y Axis Telescopic Cover	1	3103-40		TOKYO SEIMITSU
4	Z Axis Telescopic Cover	1	3145-20		TOKYO SEIMITSU

**ATC Magazine Cover (60Tools)****DRAWING NO. AH450055A0**

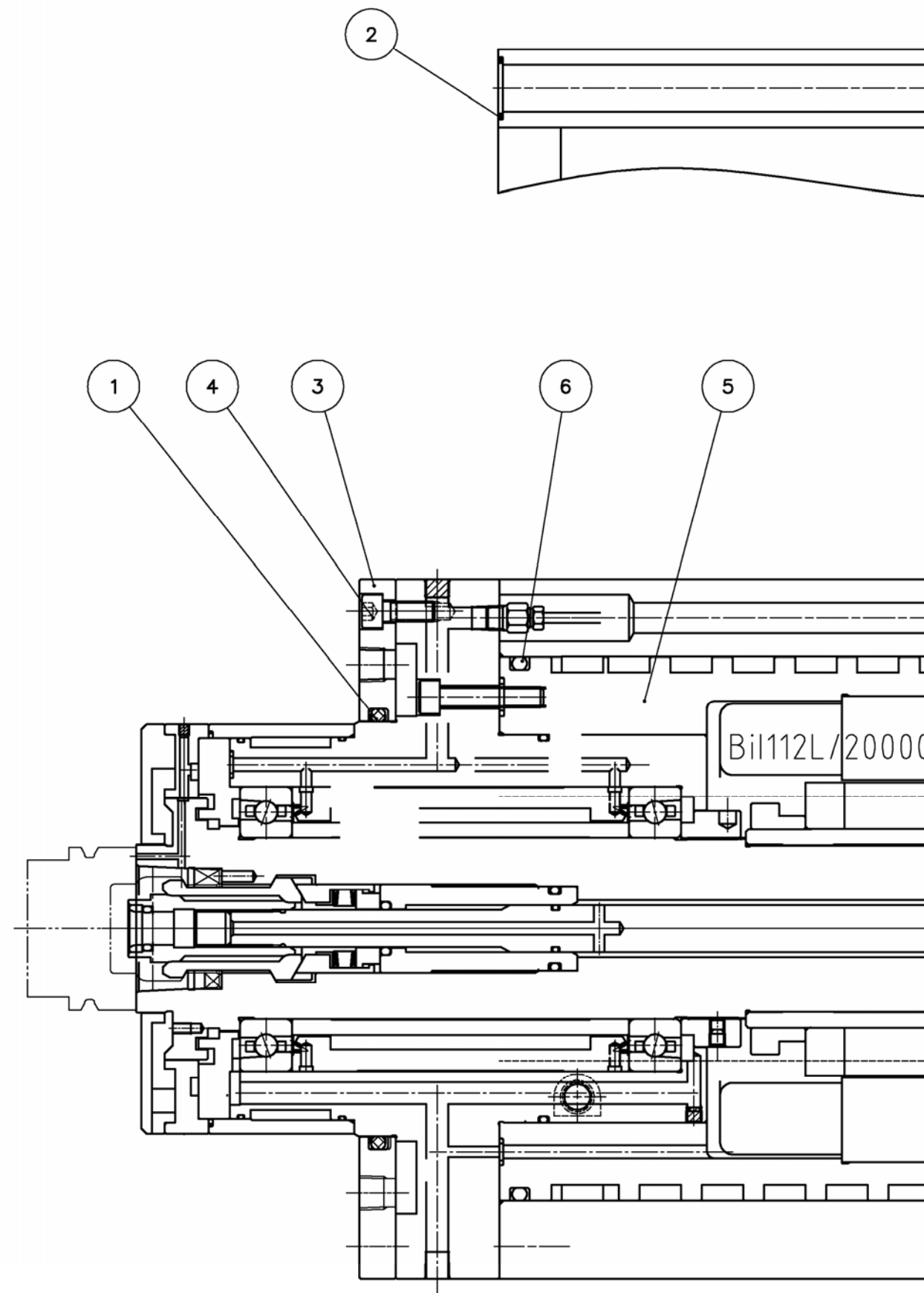
<b>No.</b>	<b>DESCRIPTION</b>	<b>Q'TY</b>	<b>CODE/TYPE</b>	<b>VER.</b>	<b>REMARKS</b>
1	ATC Door	1	P00193	D1	SS400
2	ATC Safety Cover	1	P00201	E4	SS400
3	ATC Door Window	1	P00205	A	PET
4	Ball Catch	1	C-90-1		TAKIGEN
5	Electromagnetic Door Lock	1	HS1L-DT44KMSR-R		iDEC
6	Actuator	1	HS9Z-A2S		iDEC
7	Machinery Handle	1	NMH70011		NIKKI



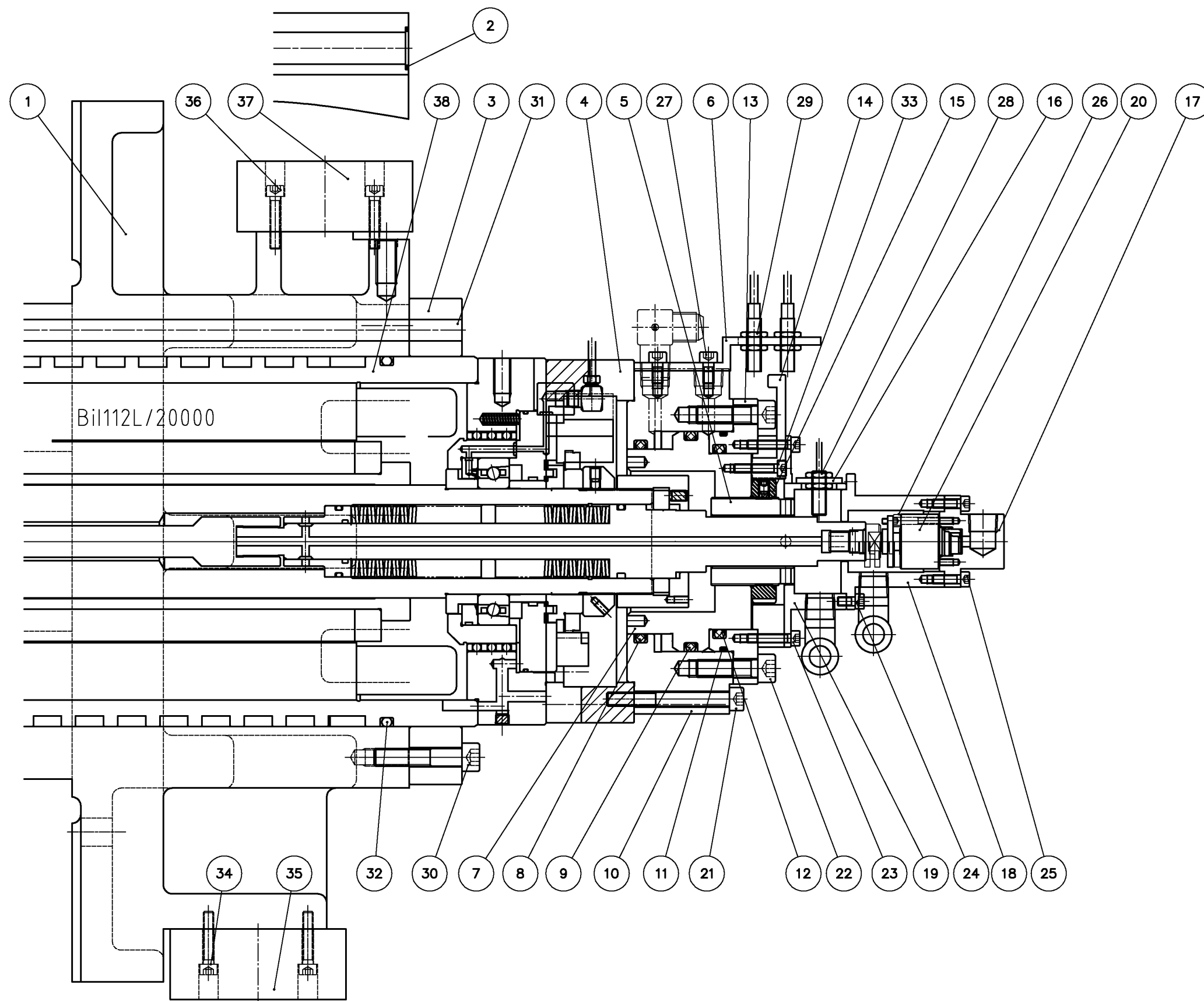
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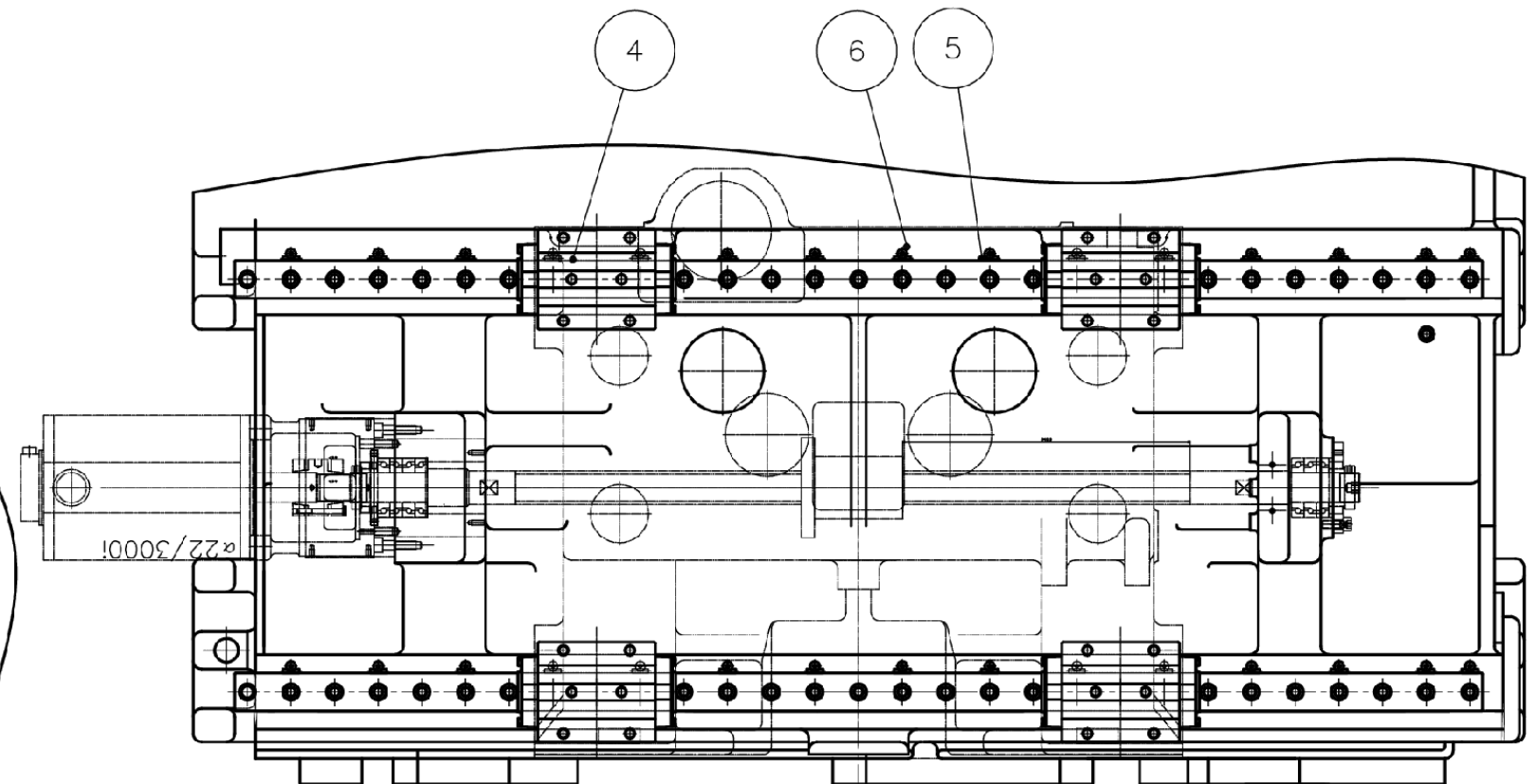
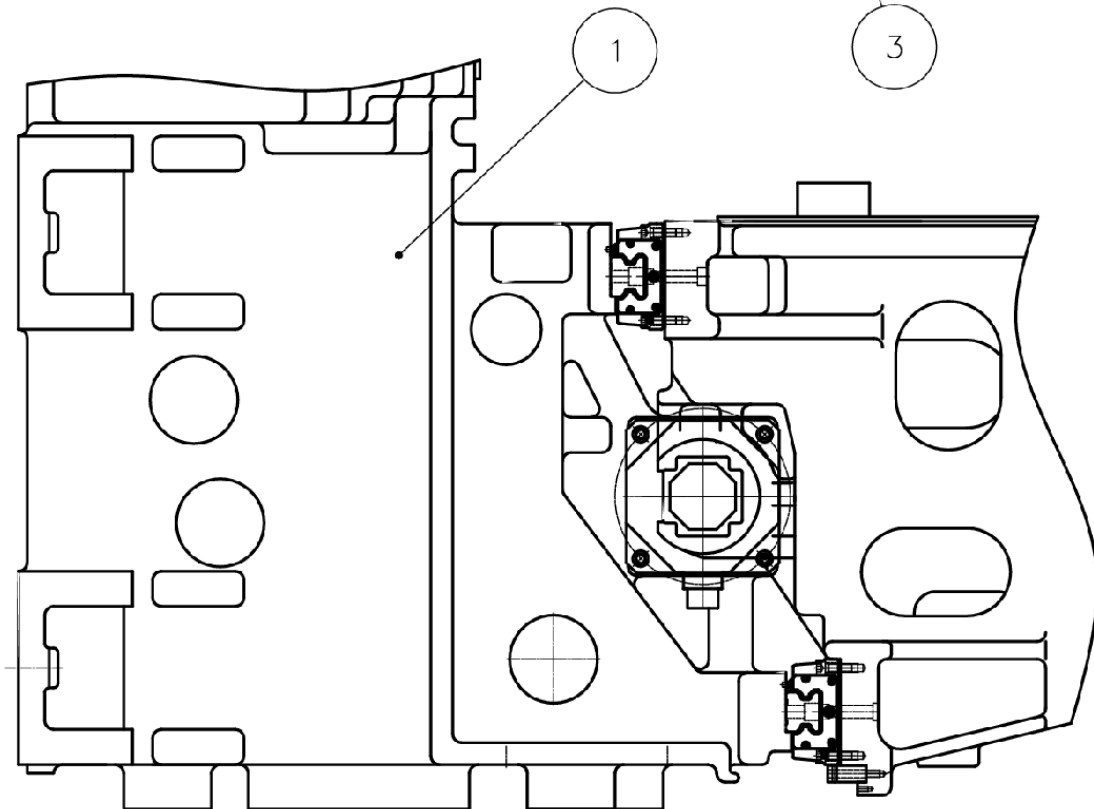
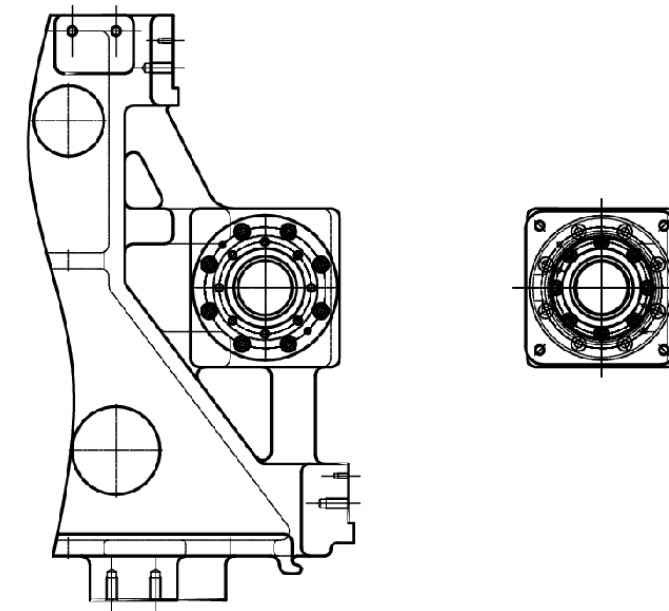
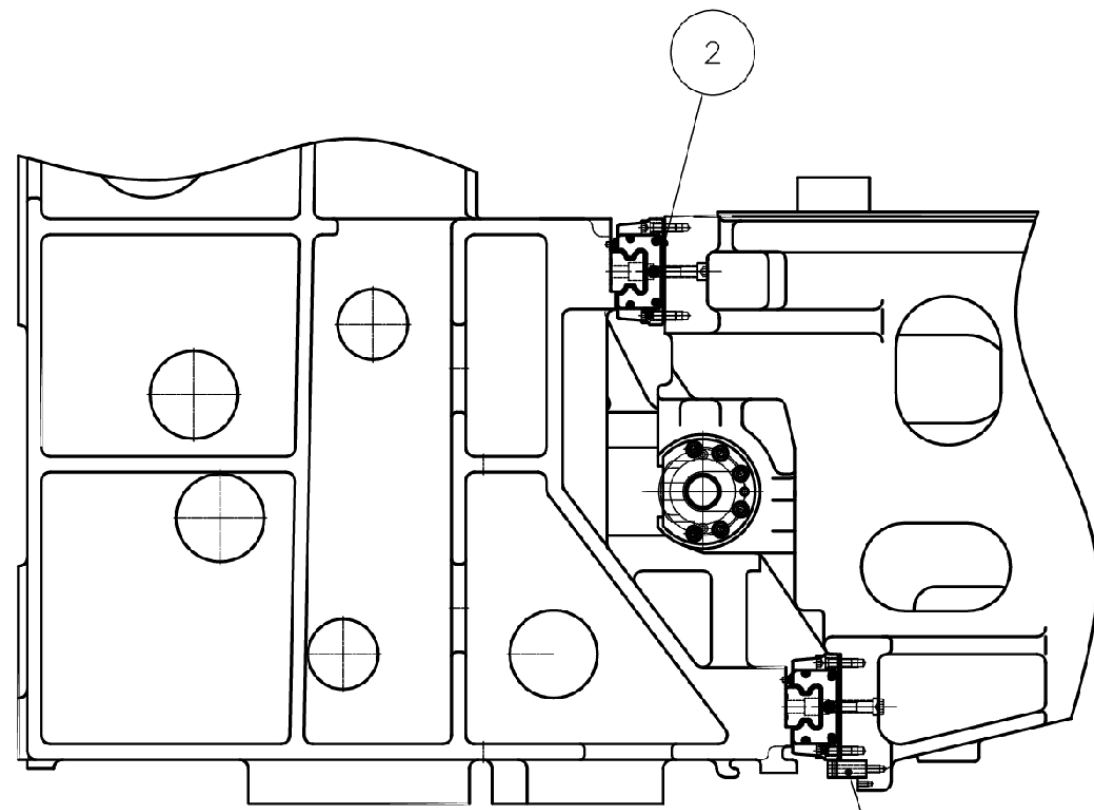


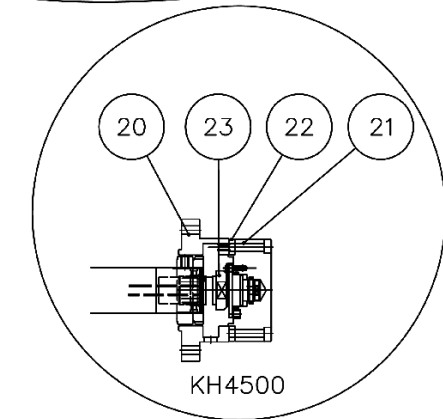
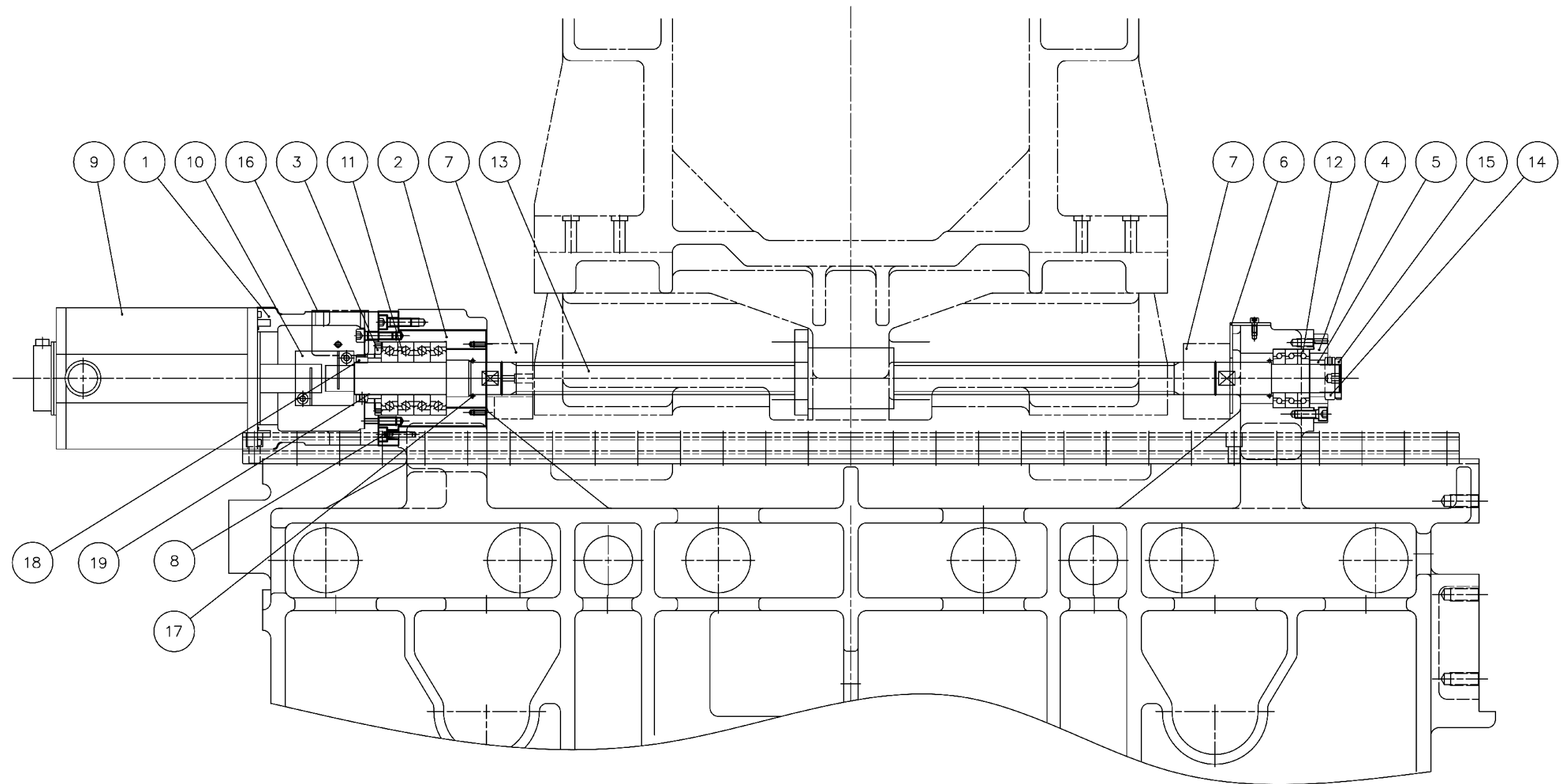




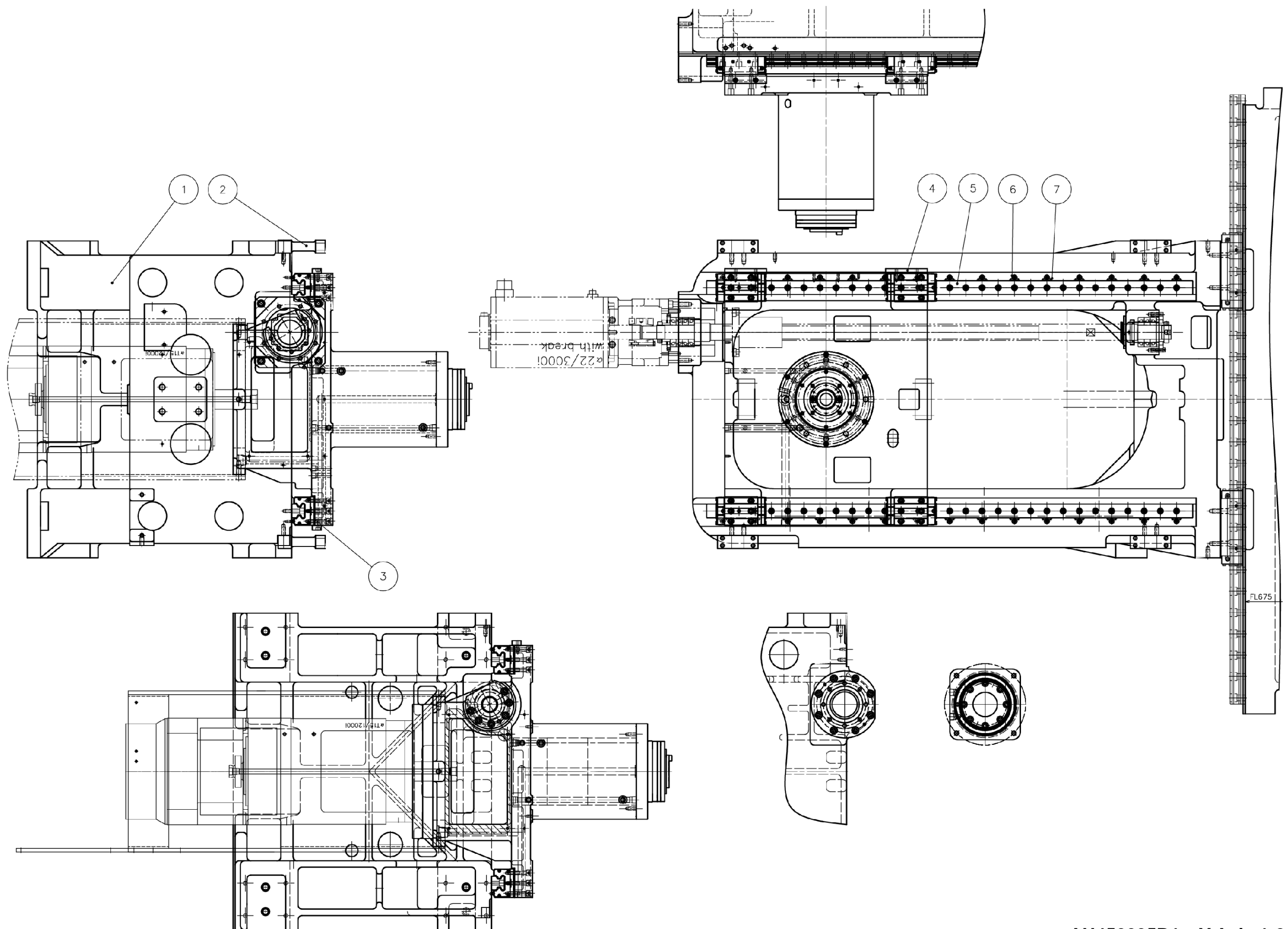
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**(HSK)**

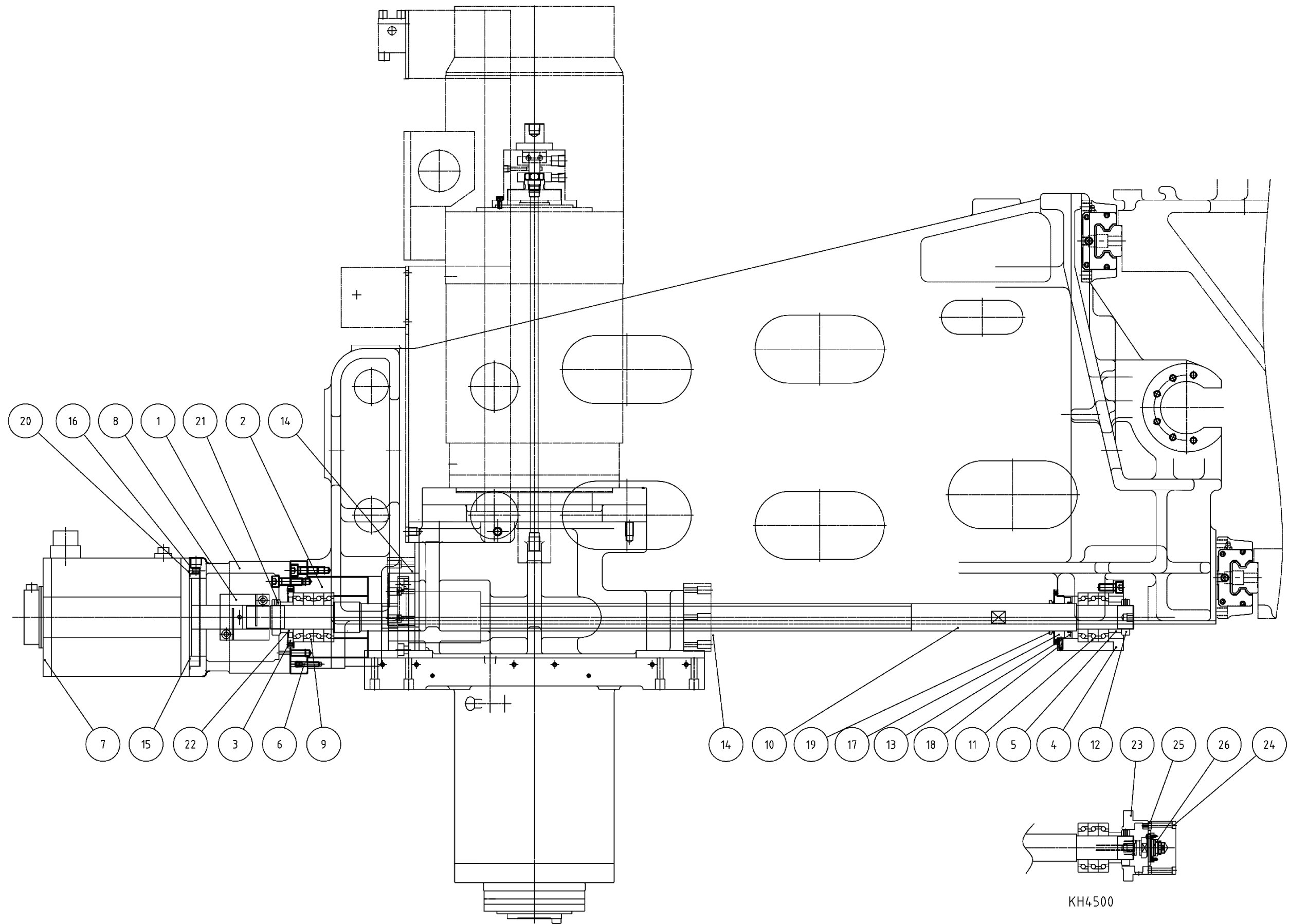






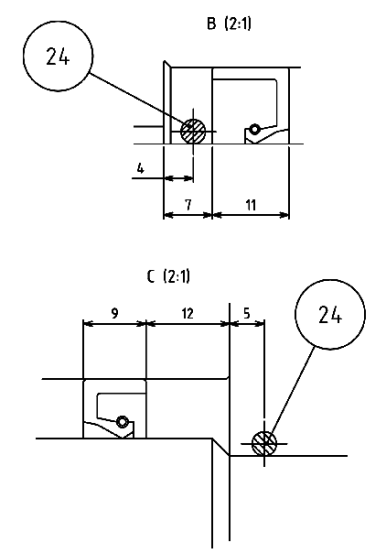
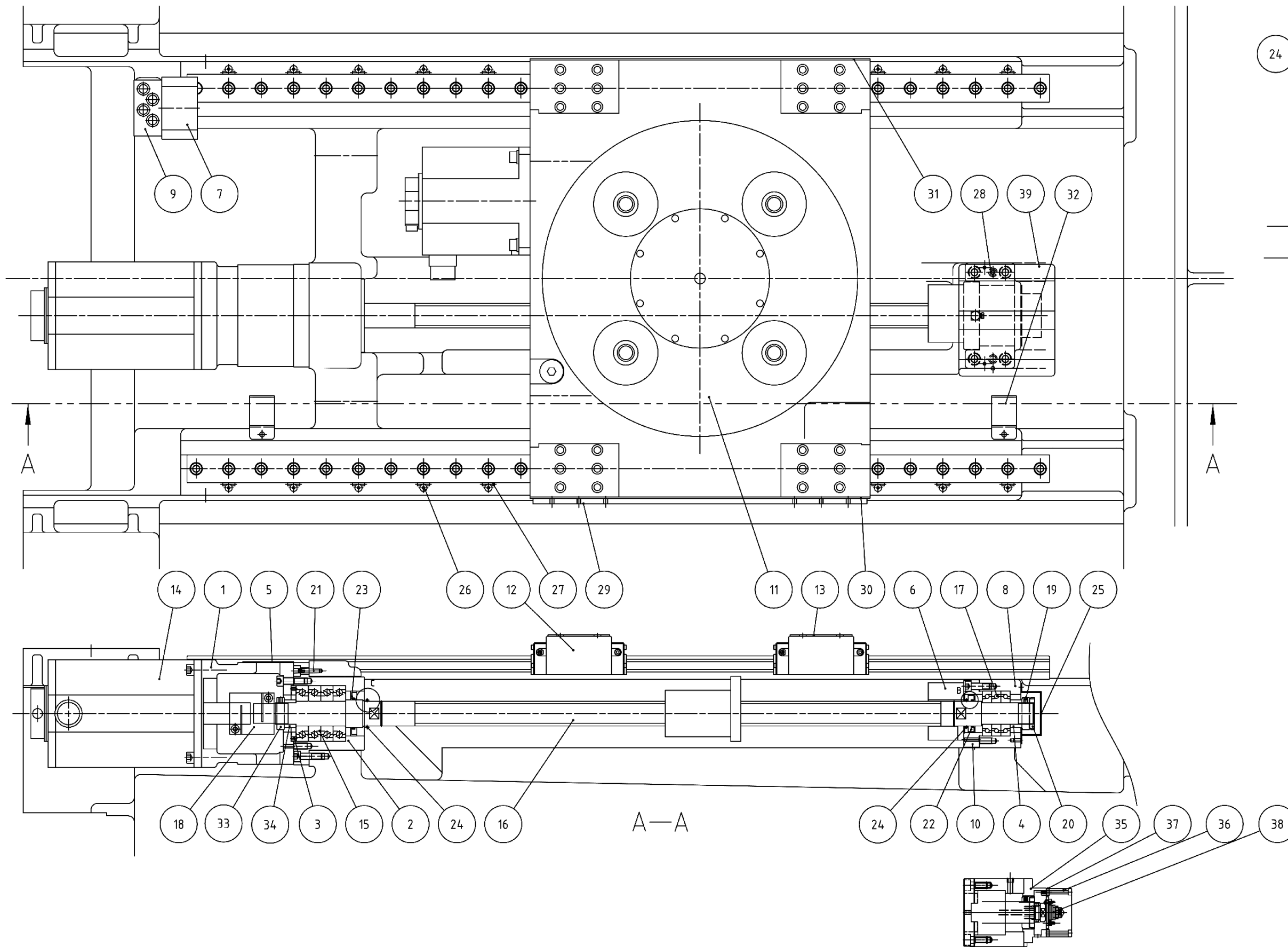
**AH450004A1 X Axis 2-2**





KH4500

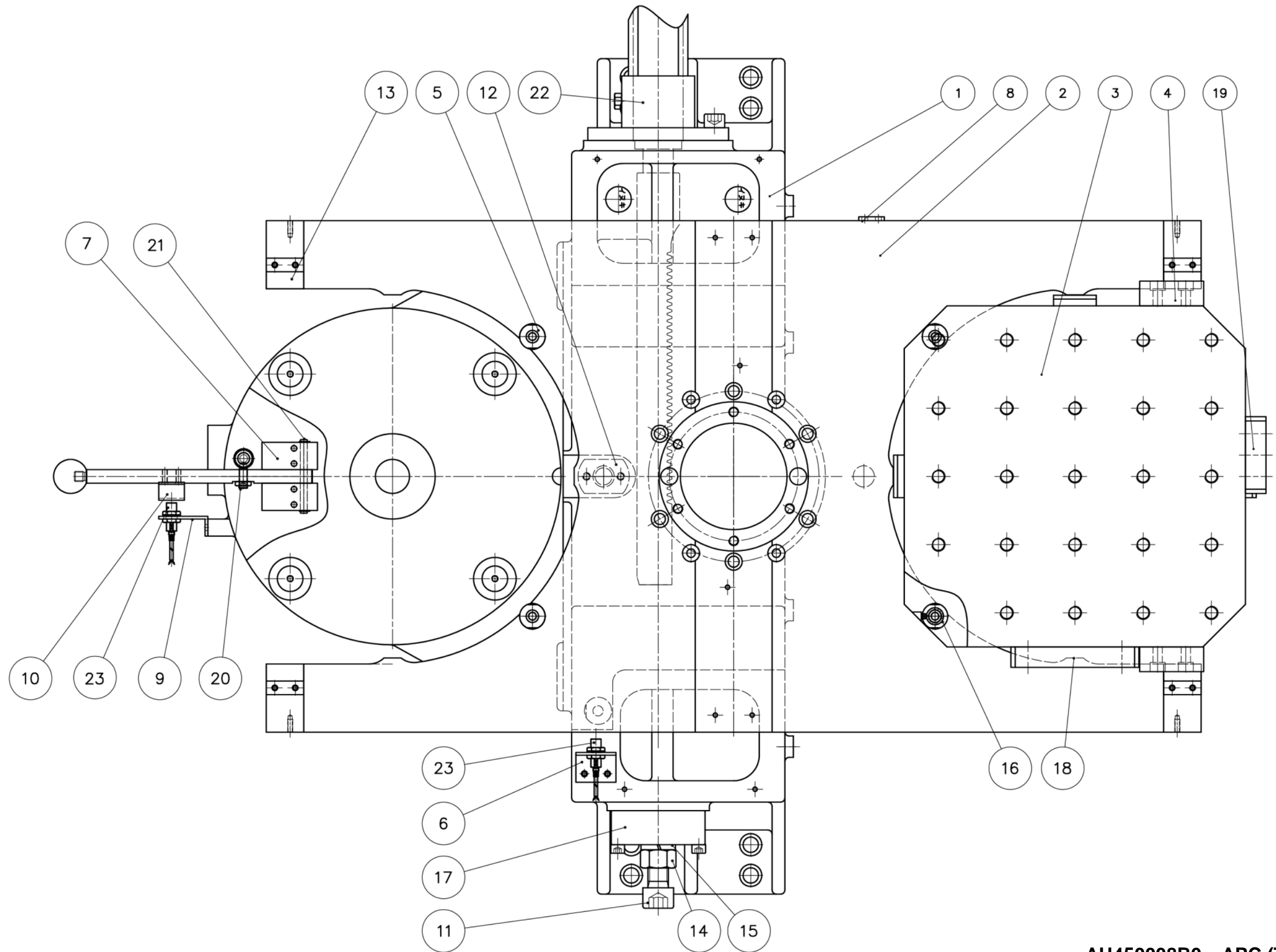
**AH450006B1 Y Axis 2-2**



A—A

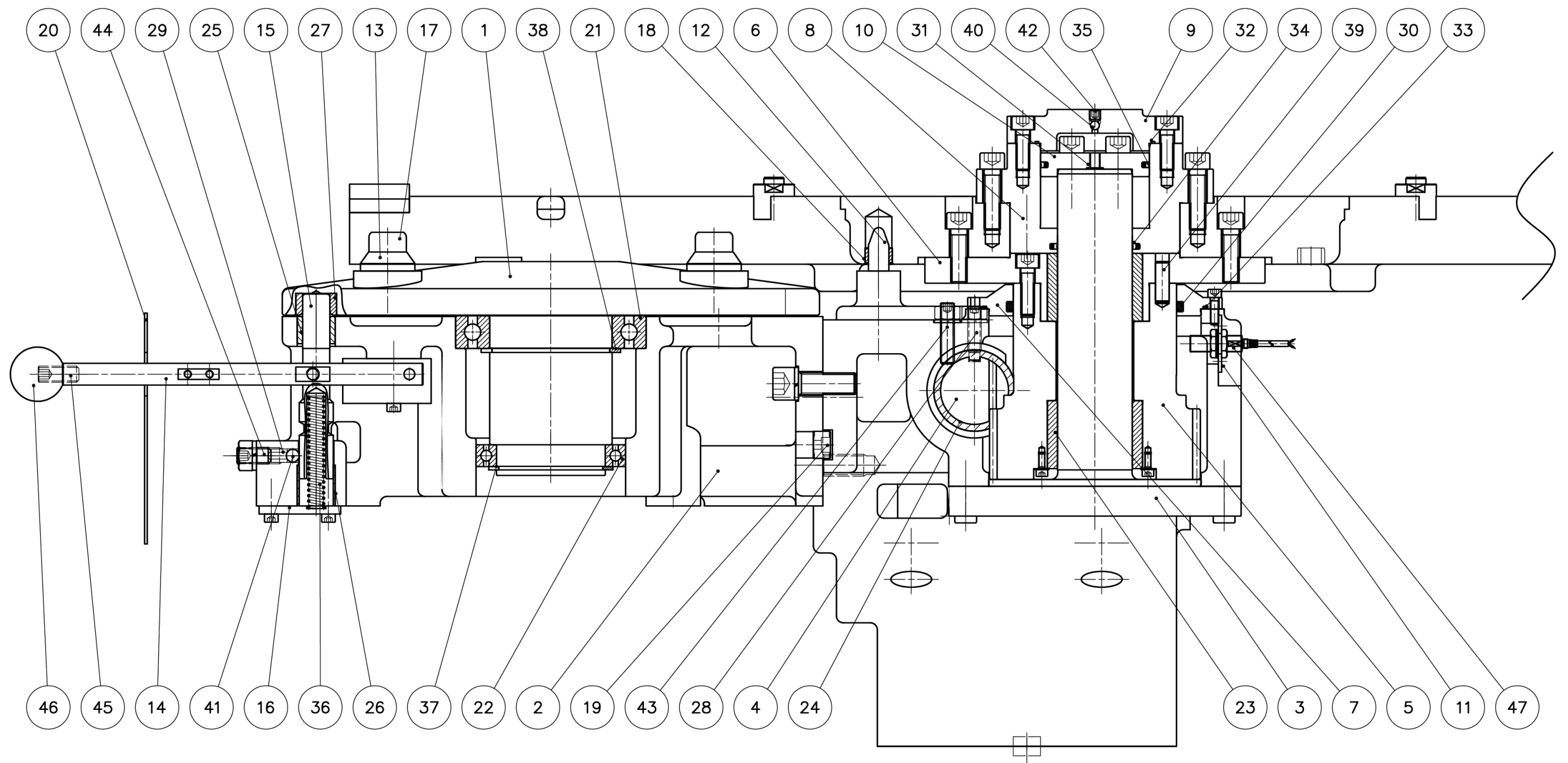
KH4500

**AH450007A2 Z Axis**

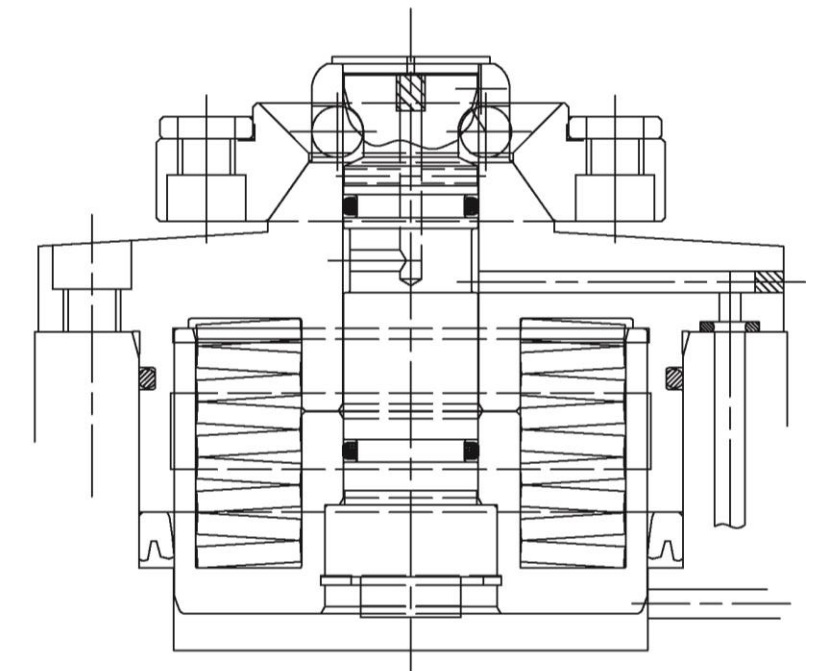
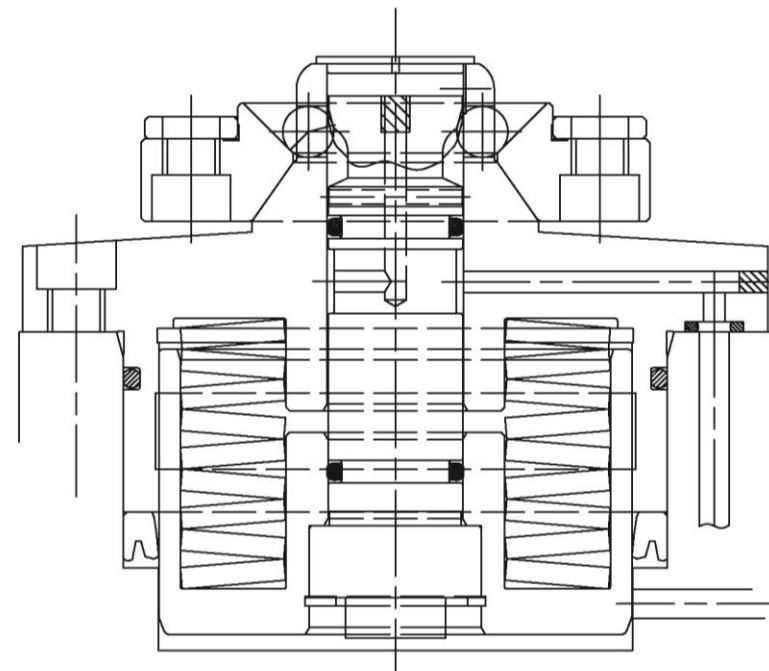
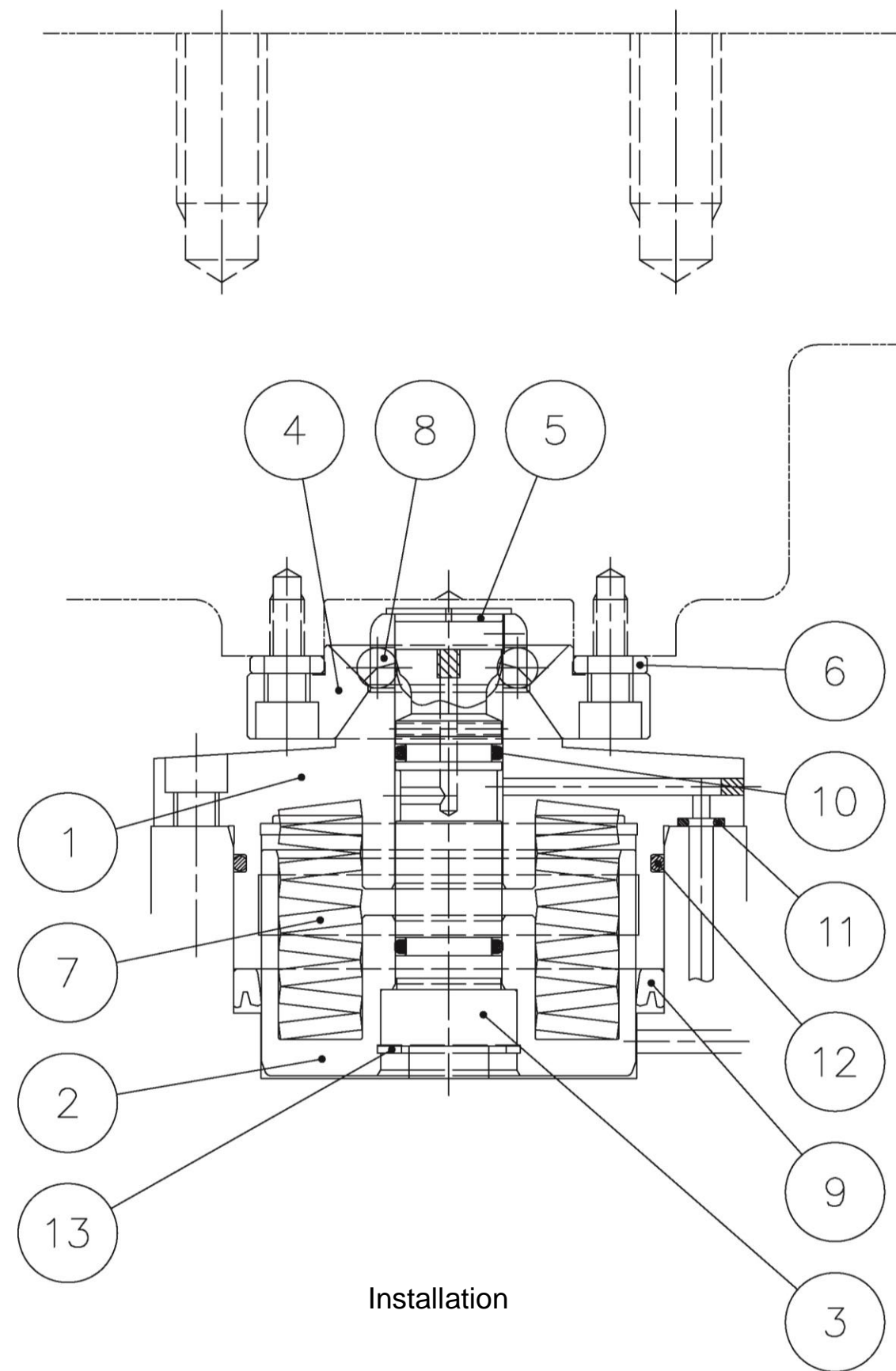


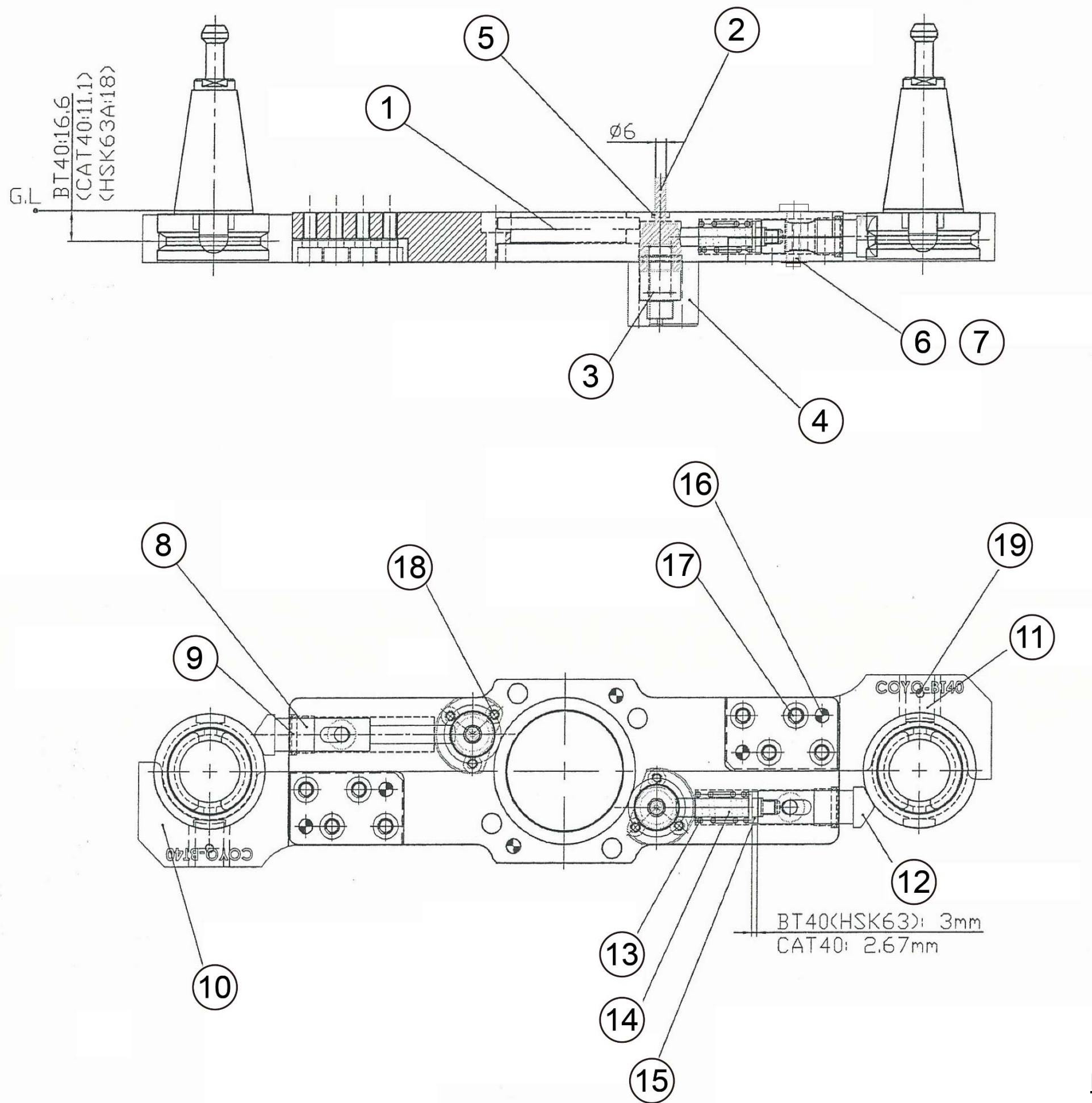
**AH450008B0 APC (Top View)**

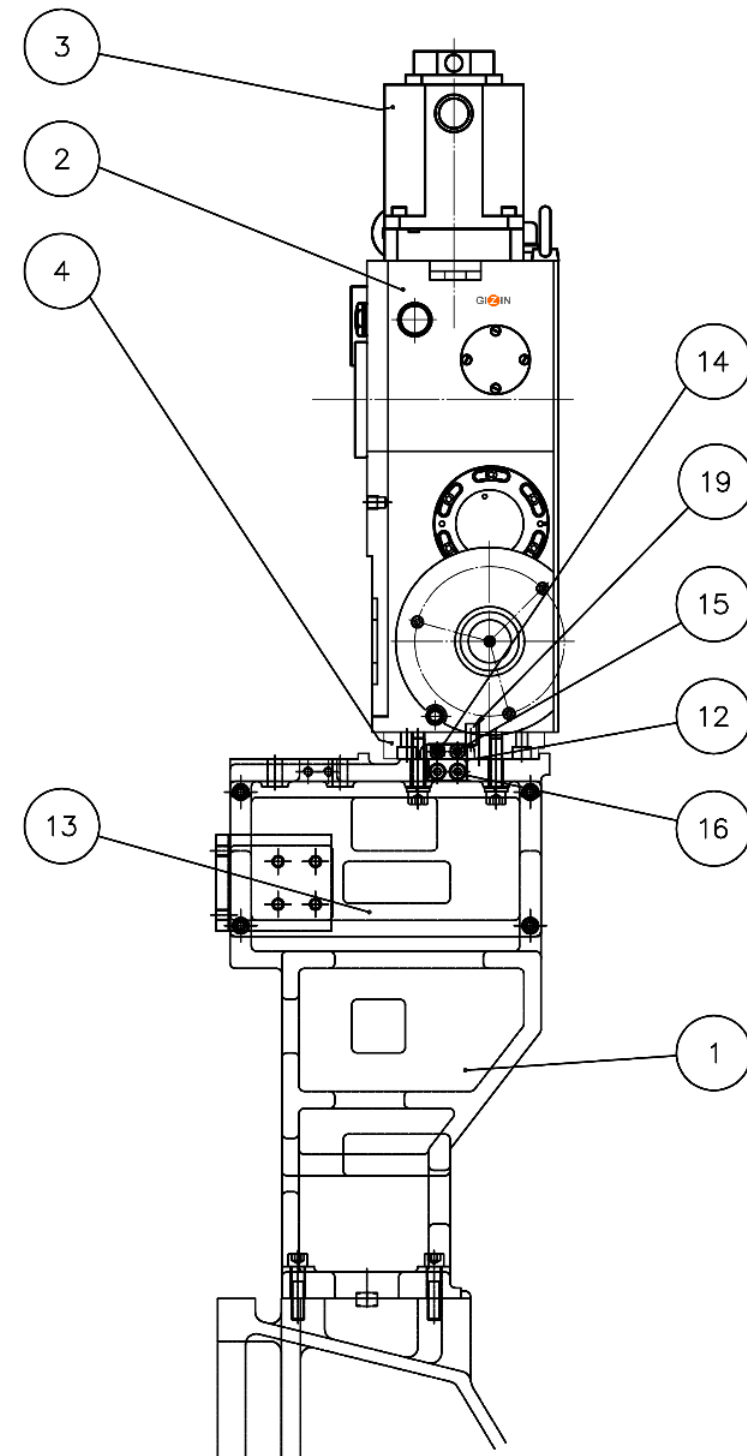
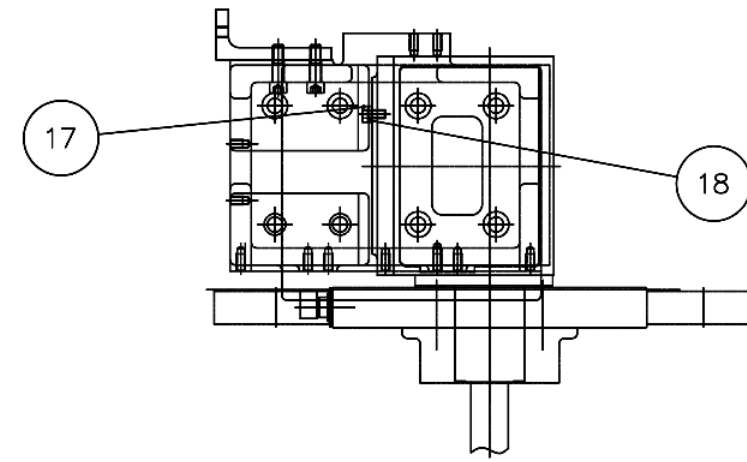
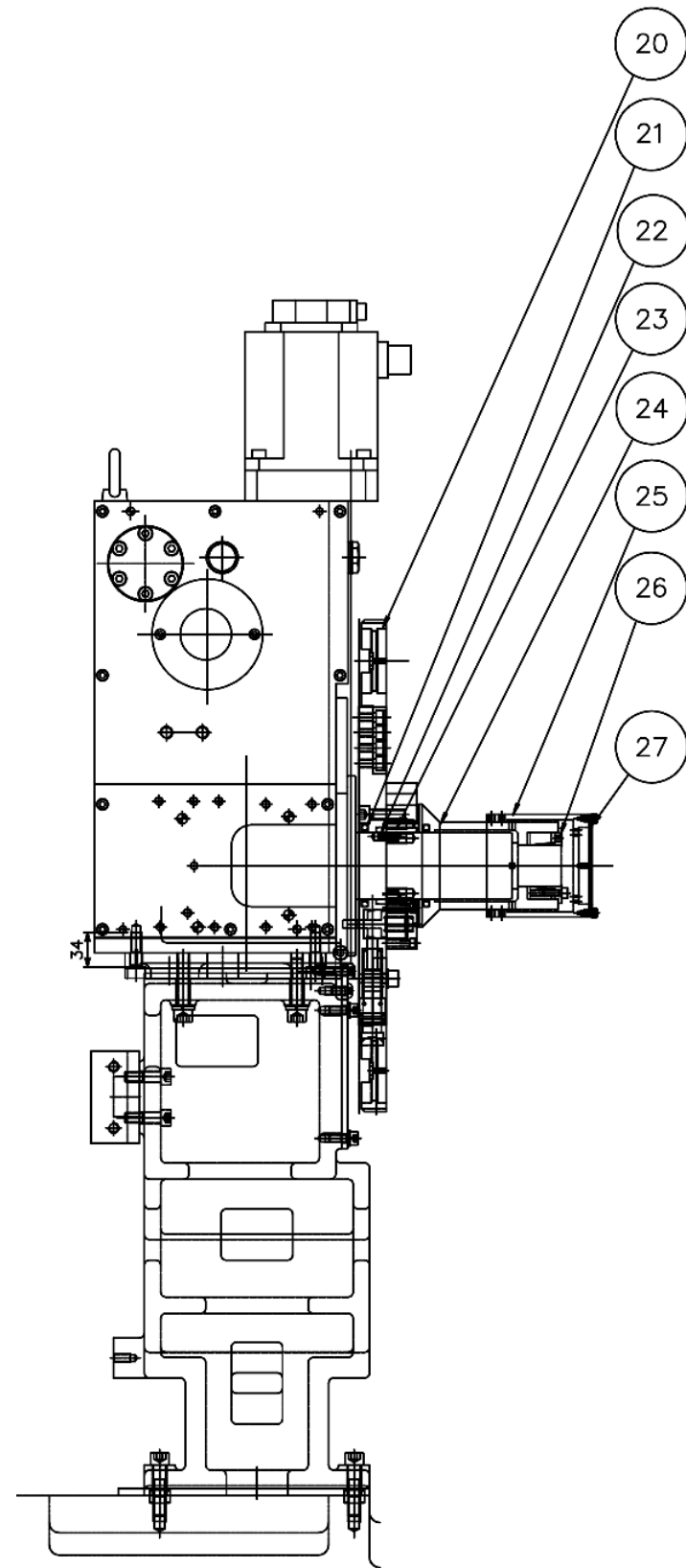


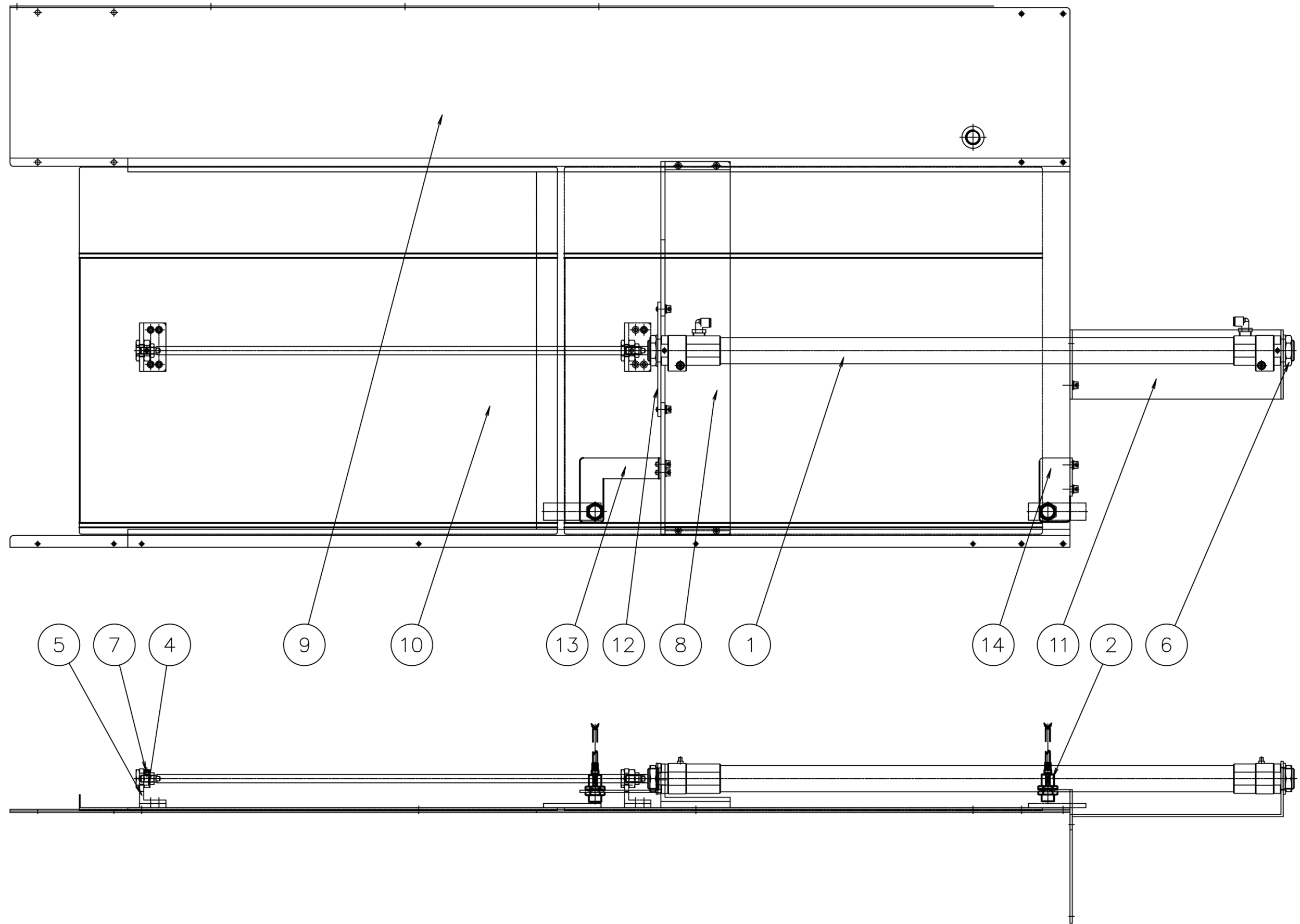


**AH450009B0 APC (Side View)**



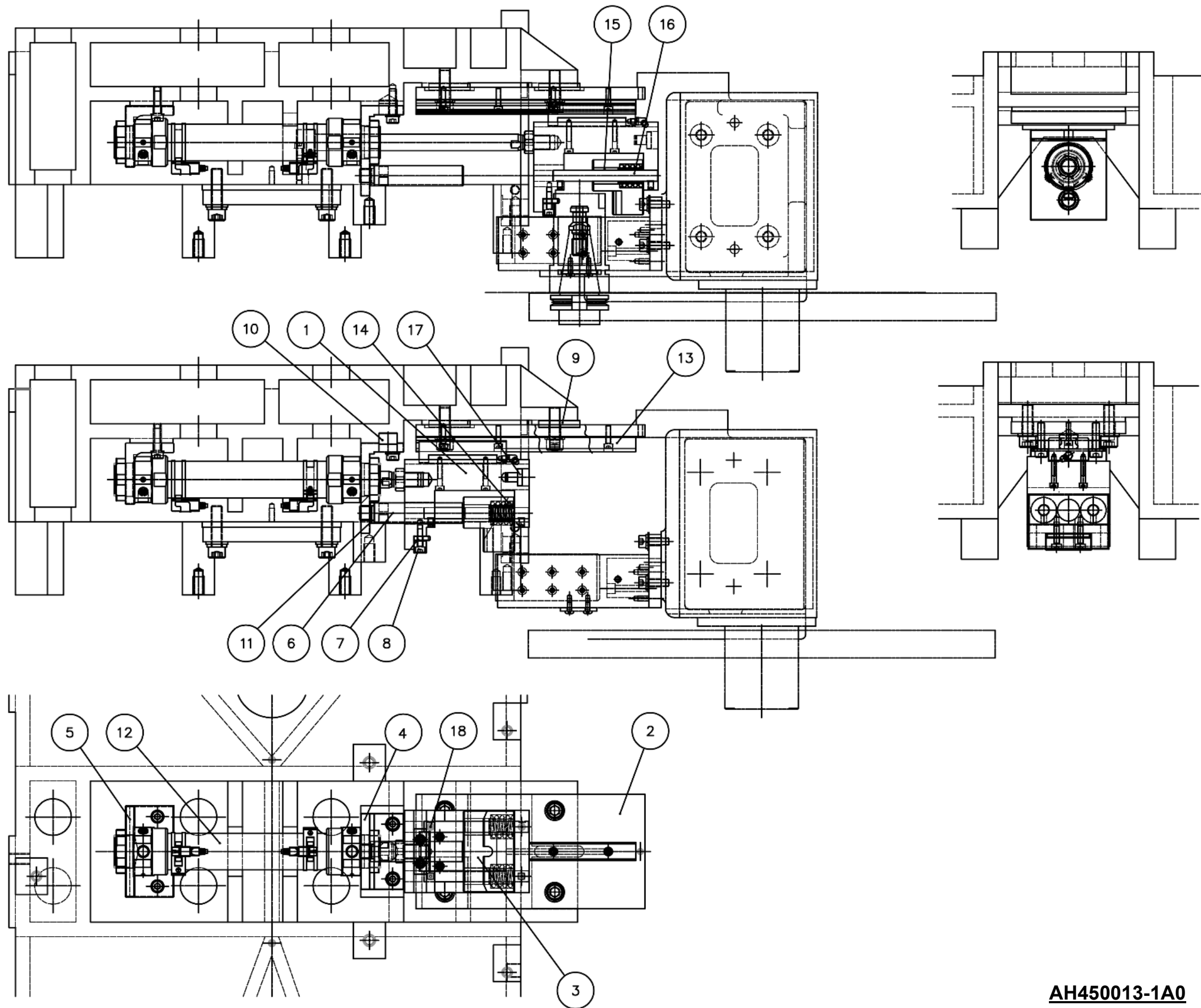




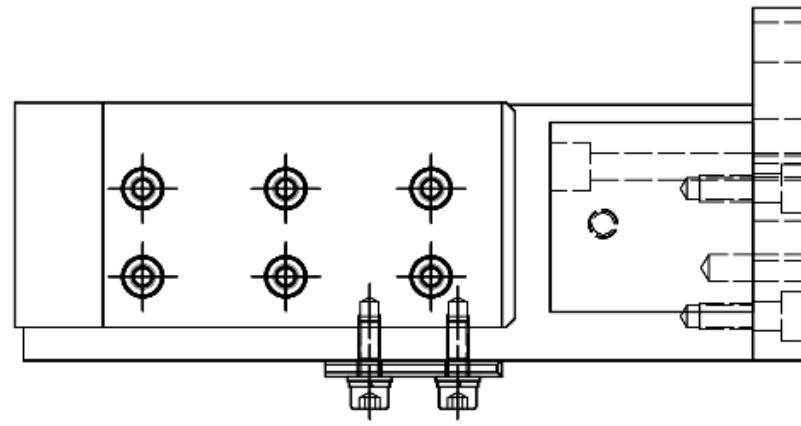


**AH450016A1 ATC Shutter**

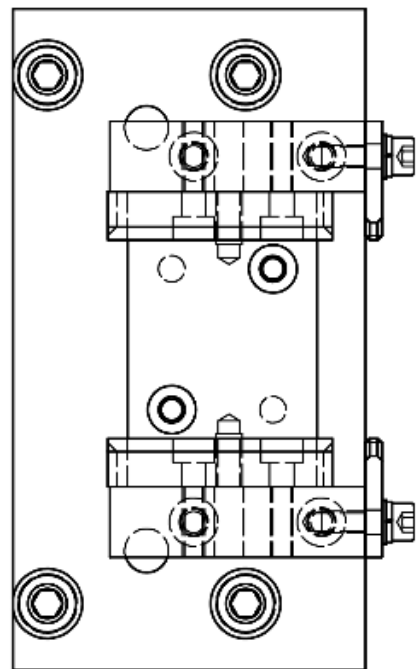
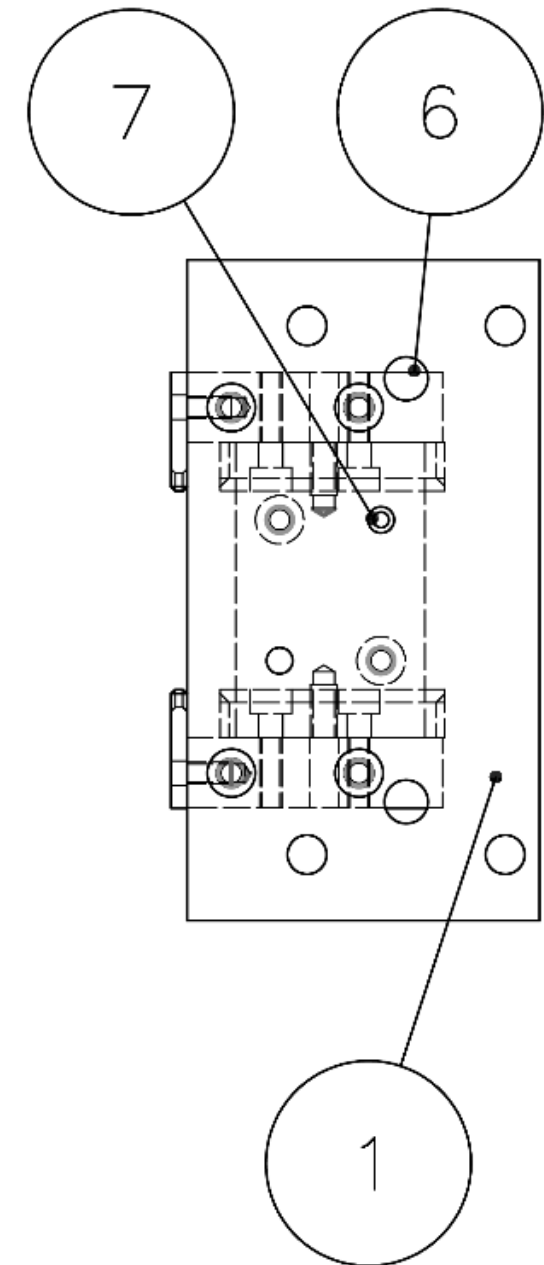
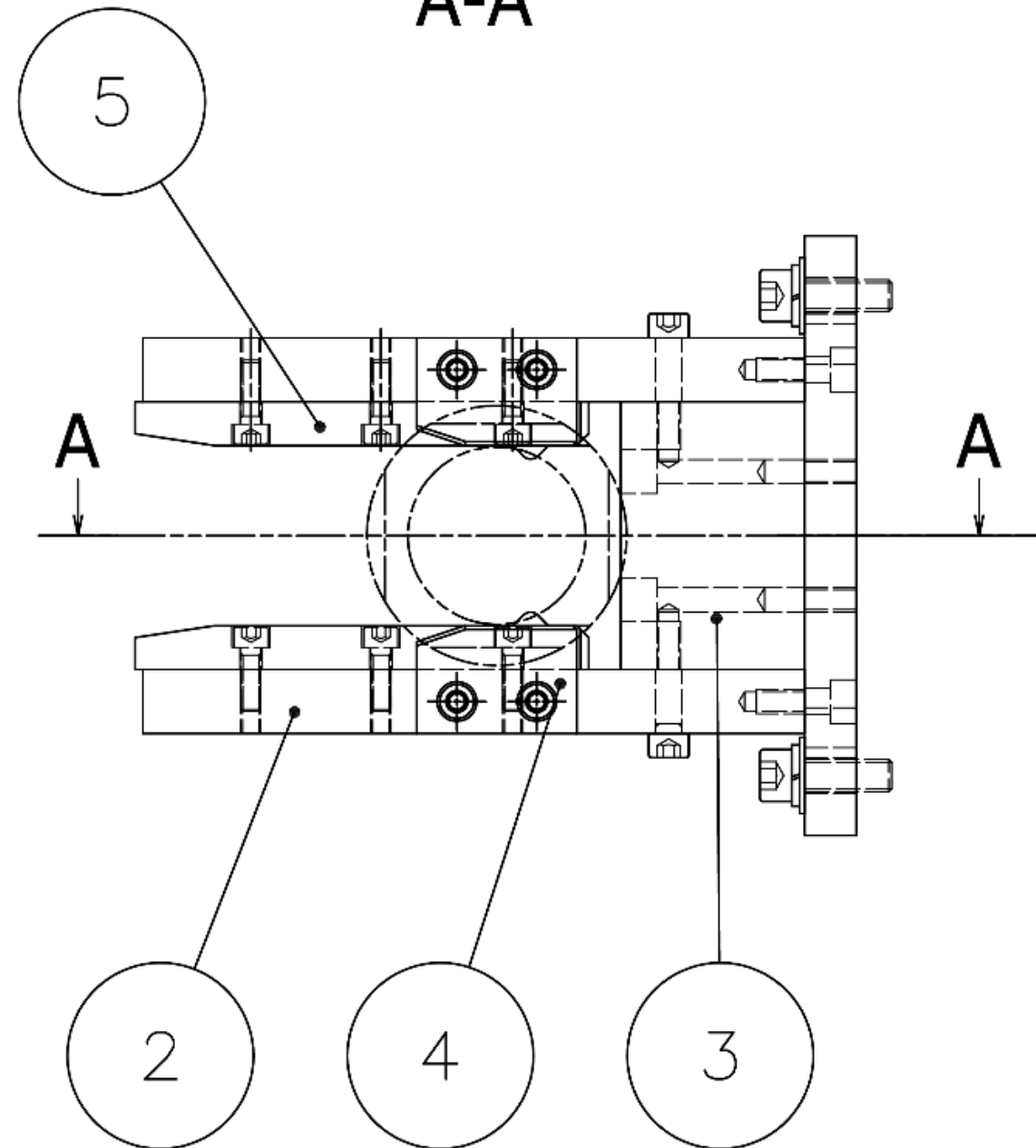




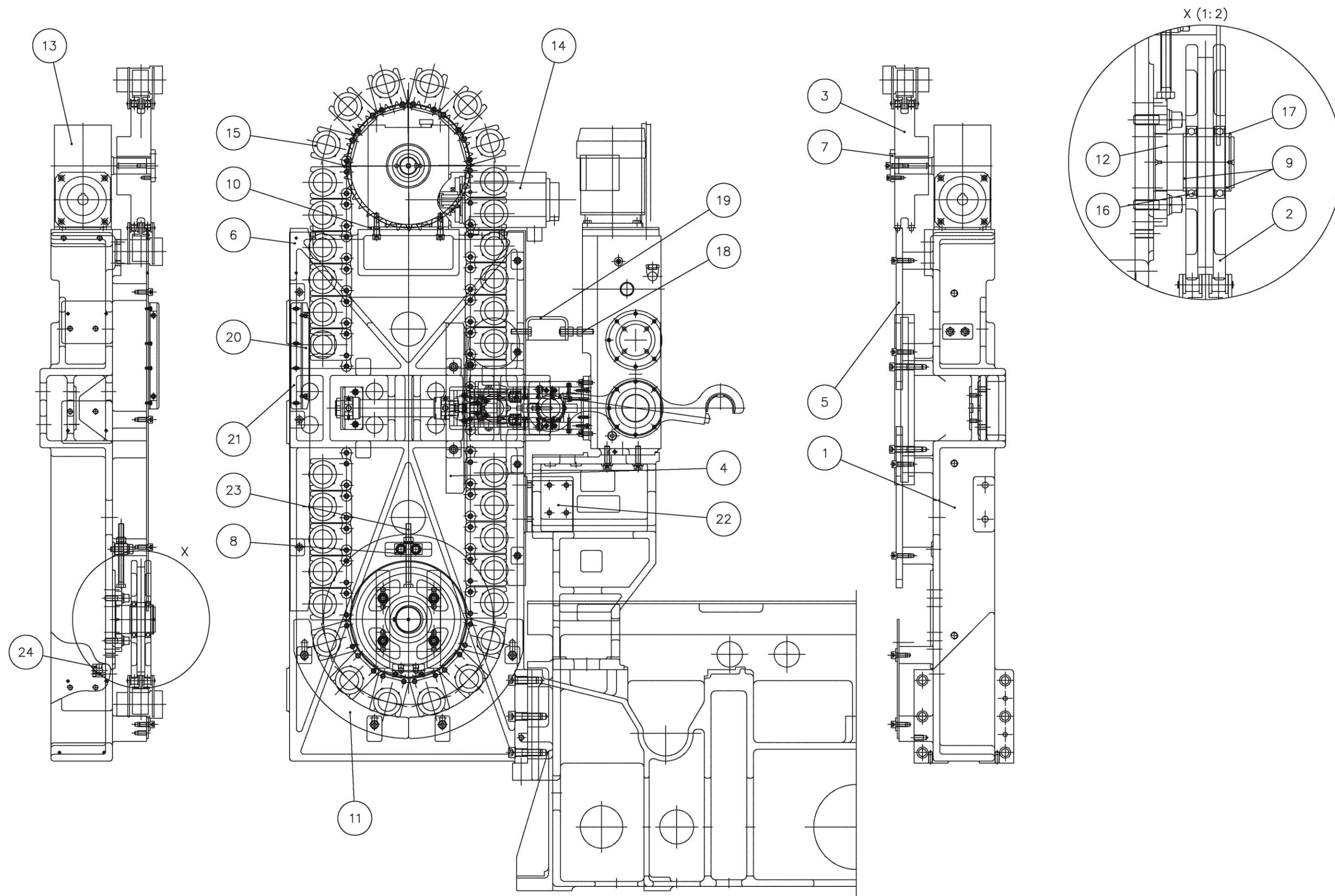
**AH450013-1A0**  
**Tool Pot Slide (Magazine Side)**



A-A

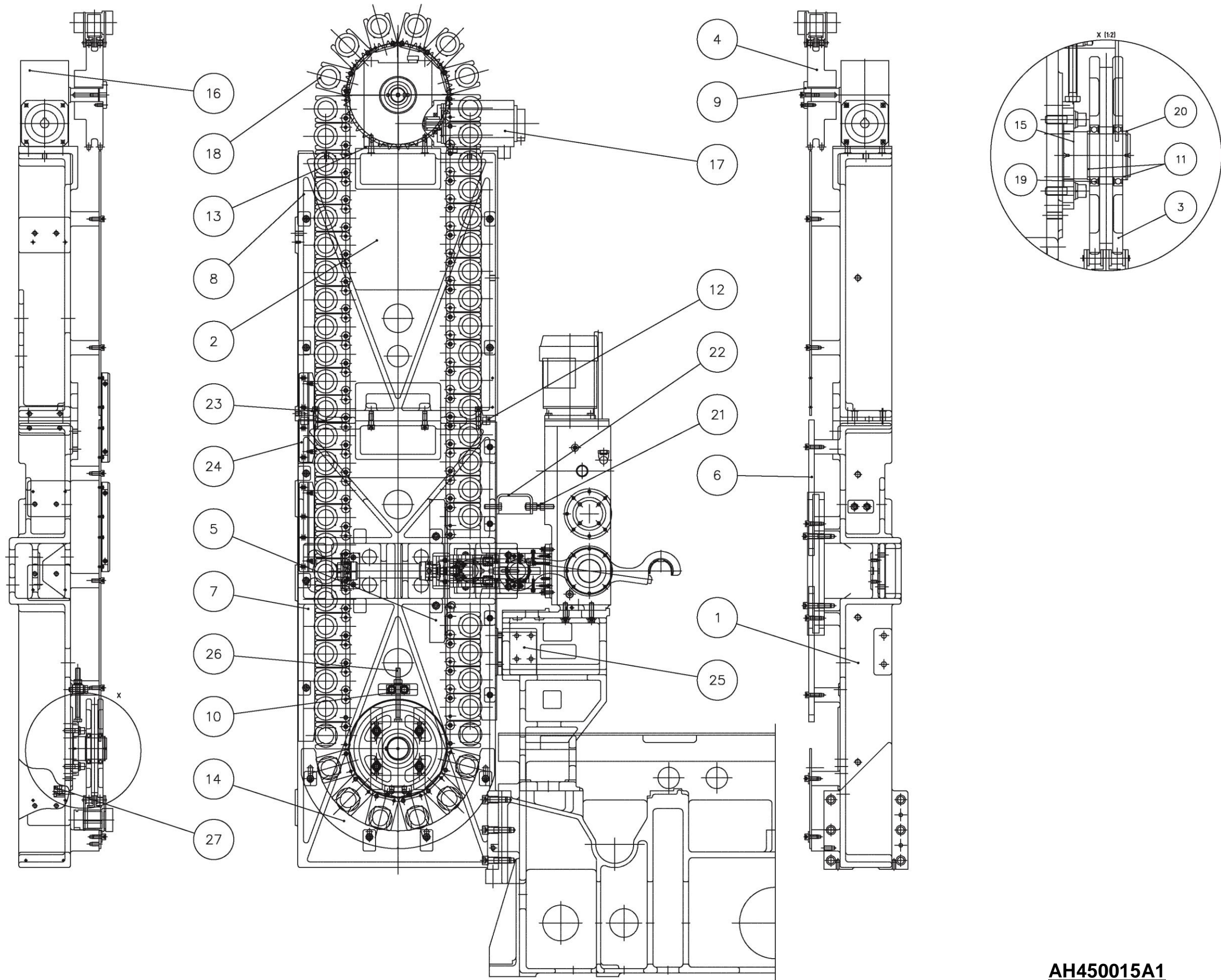


**AH450013-2A0**  
**Tool Pot Slide (ATC Unit Side)**

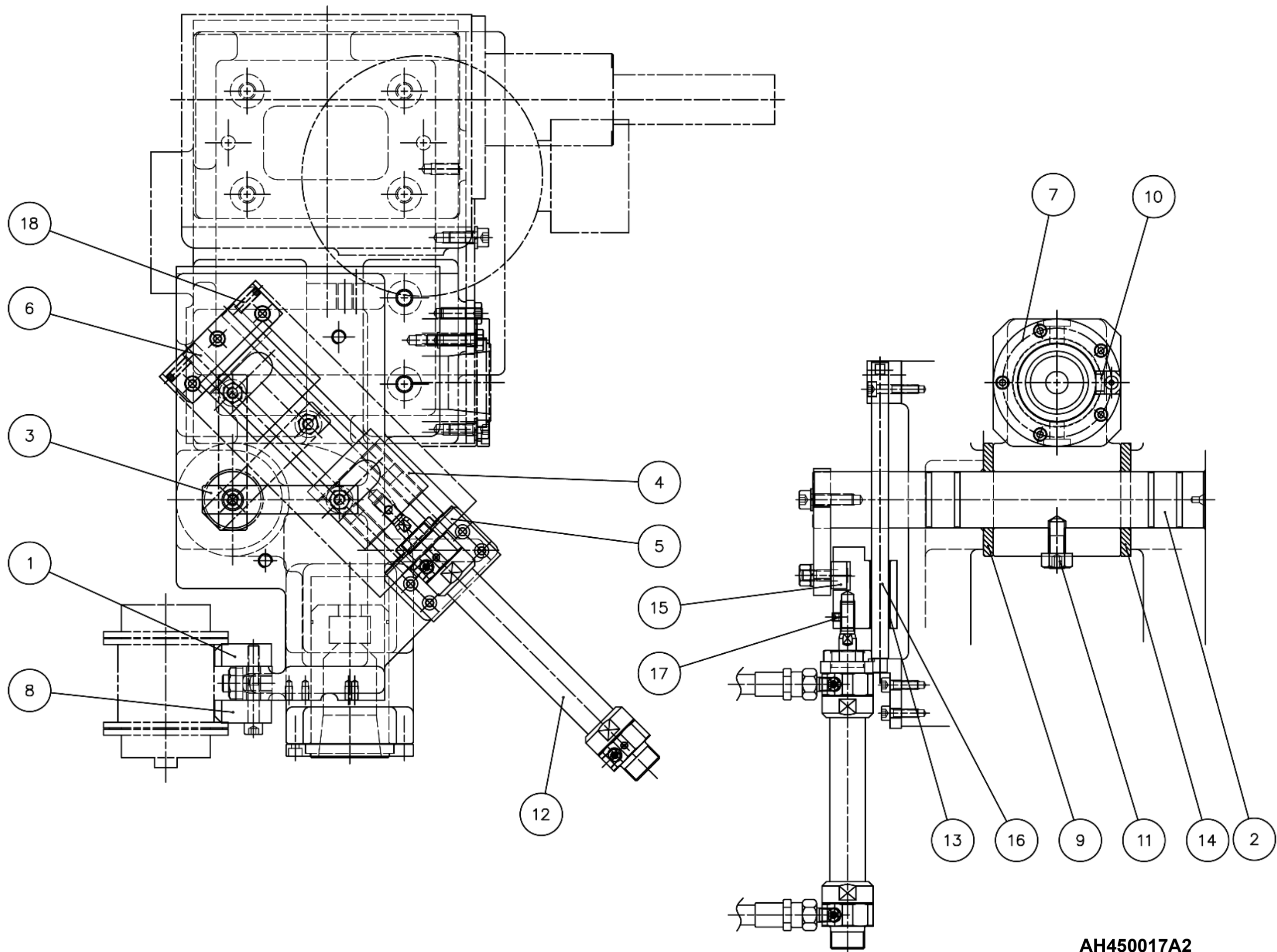


**AH450014A1**  
**ATC Magazine (40Tools)**

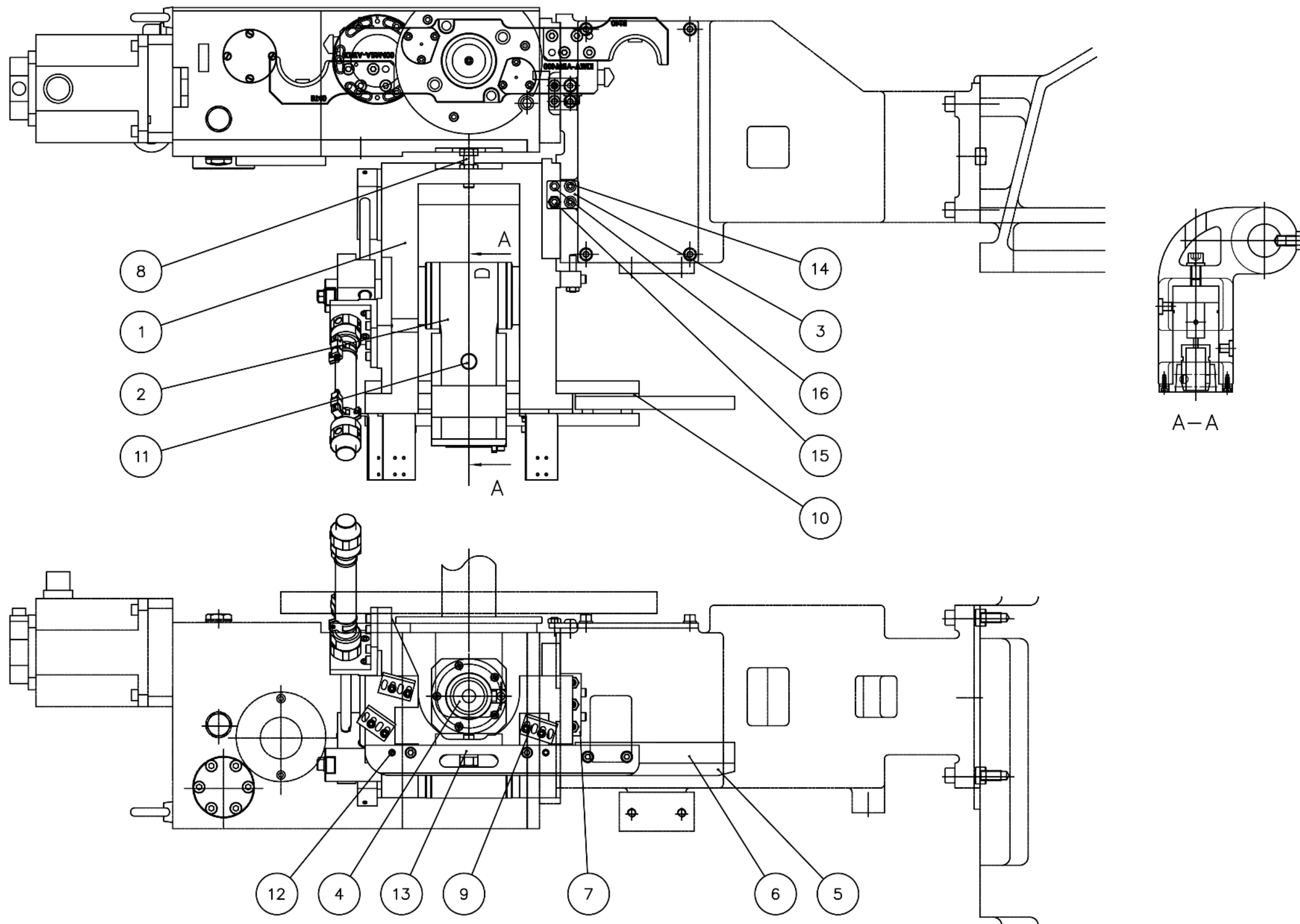




**AH450015A1**  
**ATC Magazine (60Tools)**

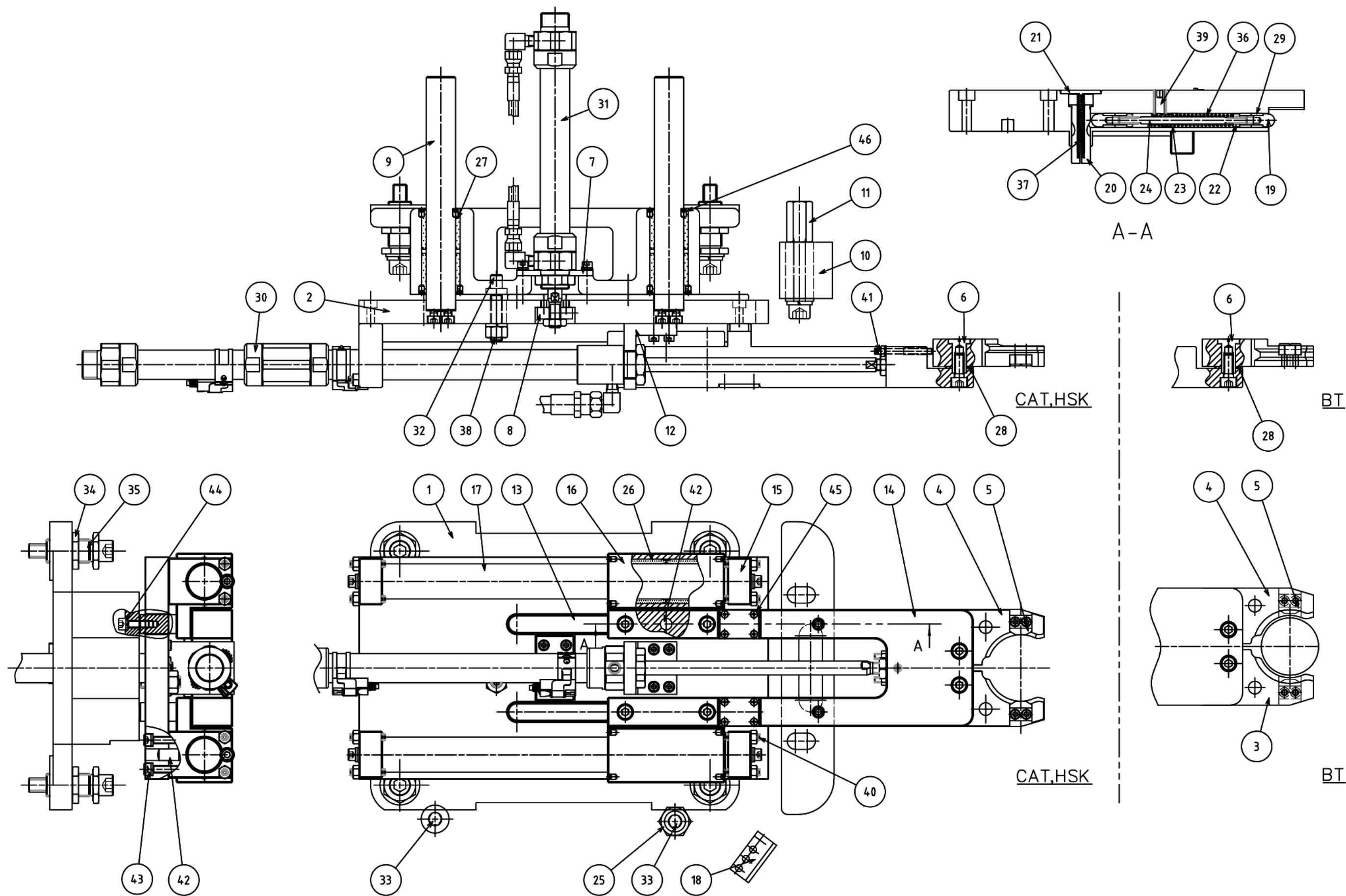


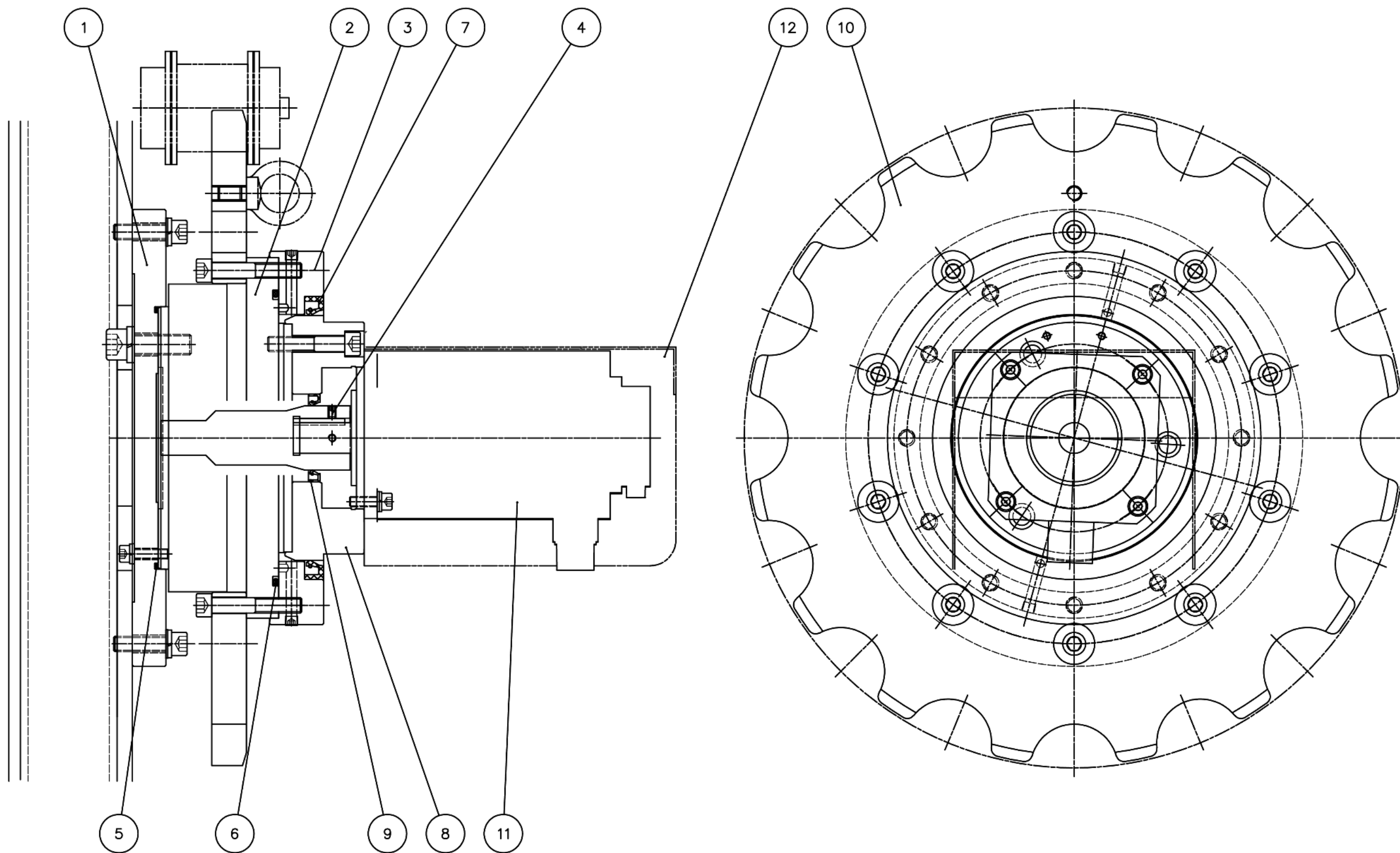
**AH450017A2**  
**Pot Index Mechanism (Top View)**



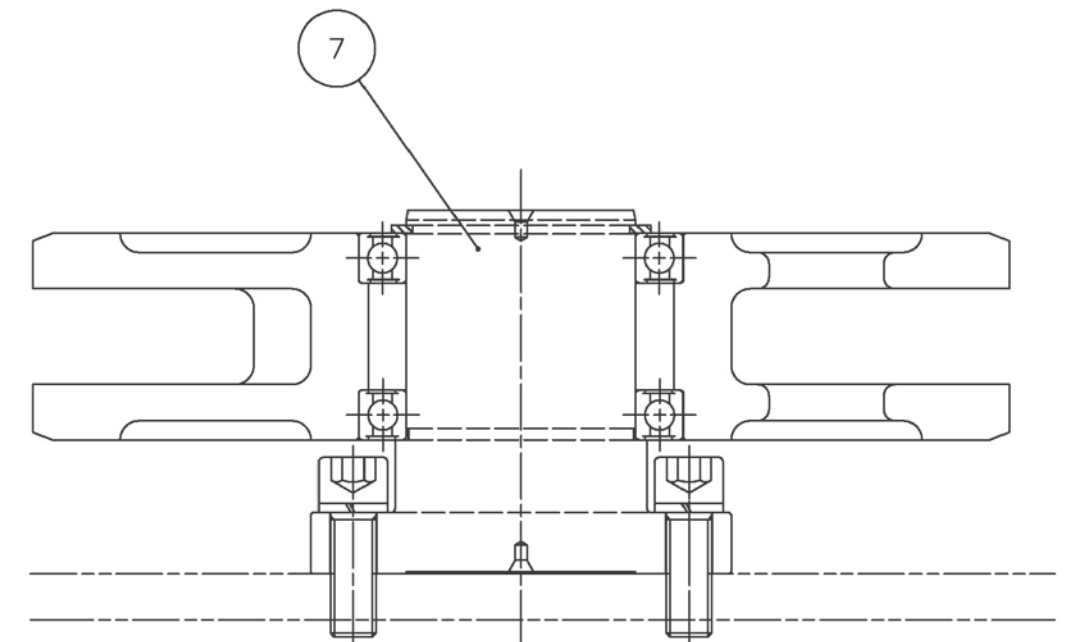
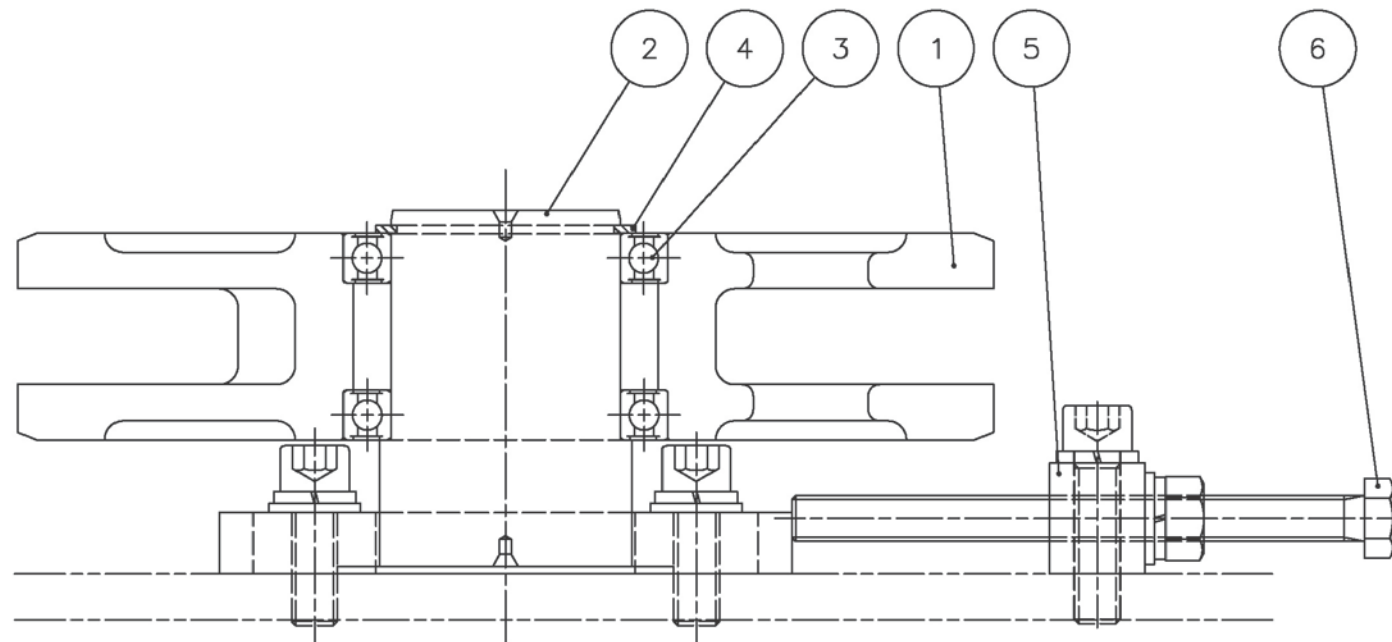
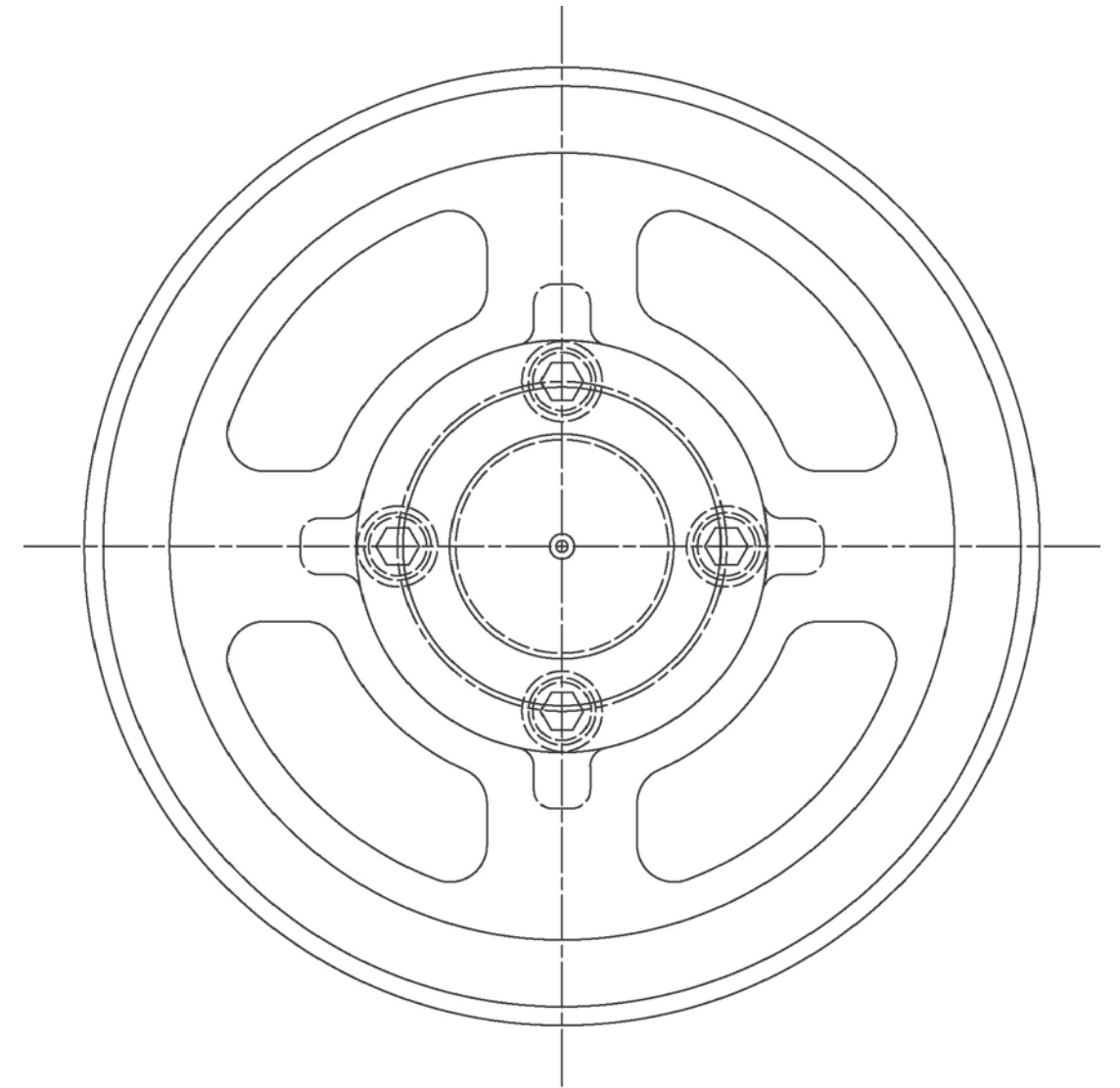
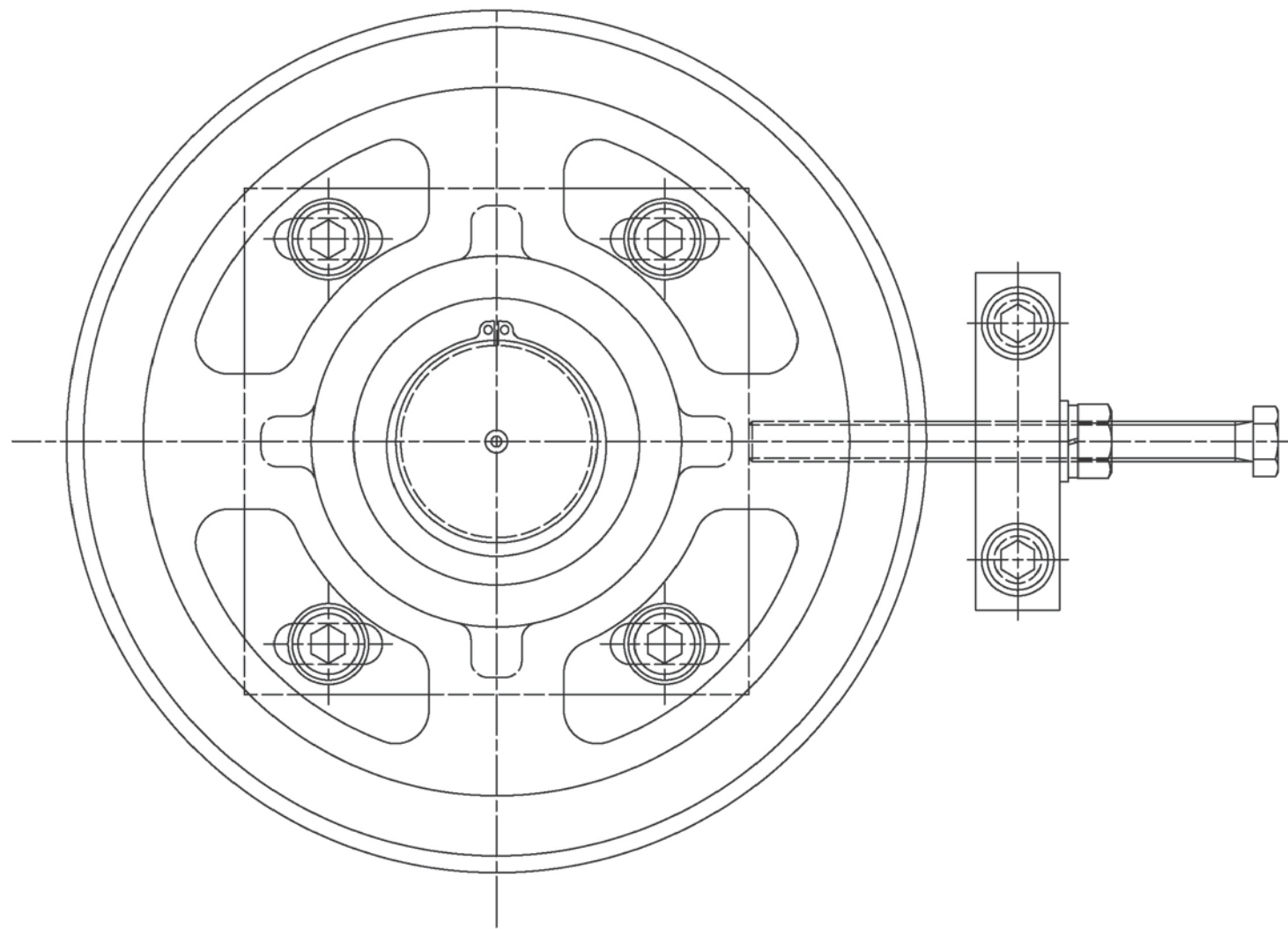
**AH450018B0**  
**Pot Index Mechanism (Side View)**







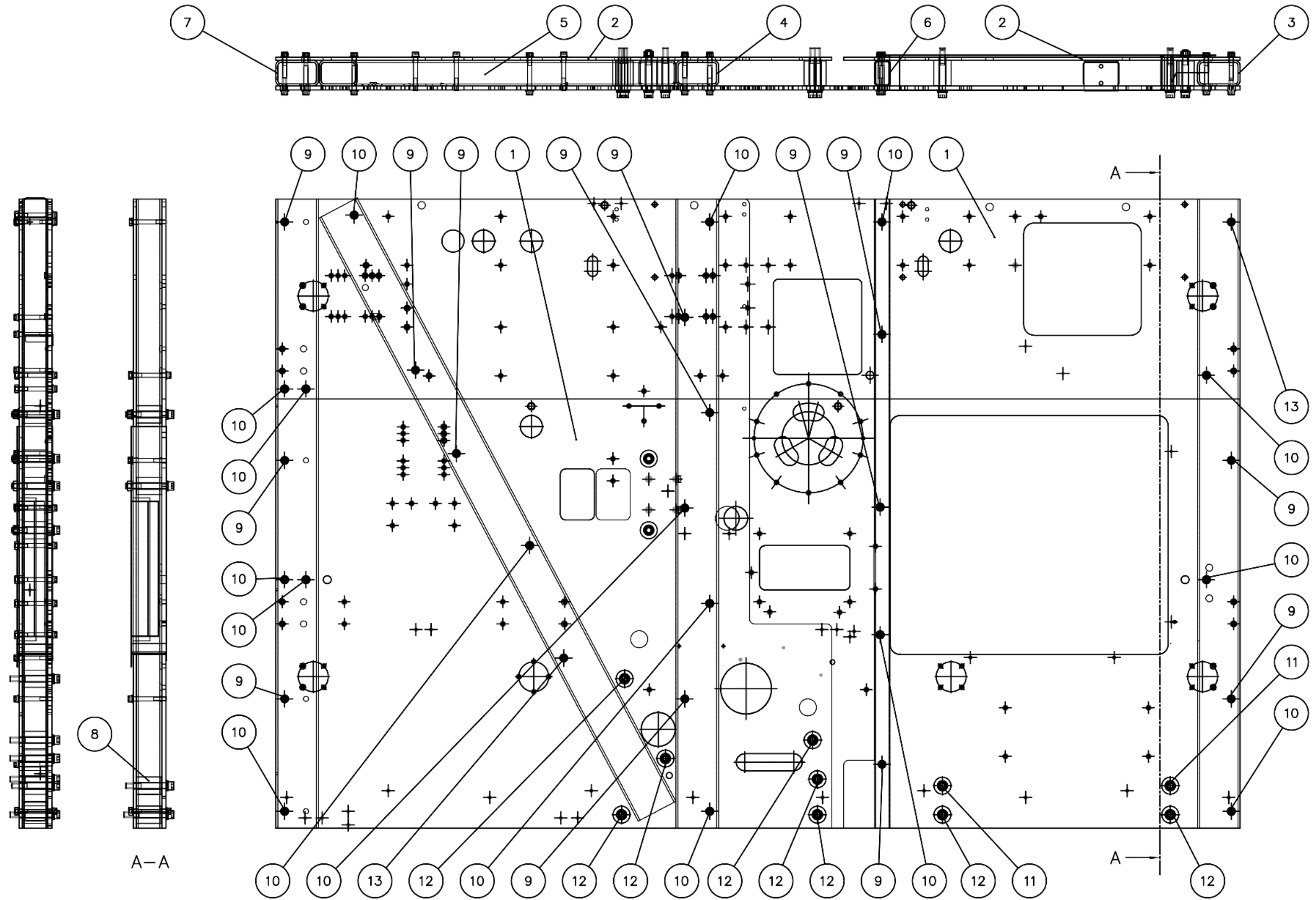
**AH450020A2**  
**Magazine Reduction Unit (ATC120)**

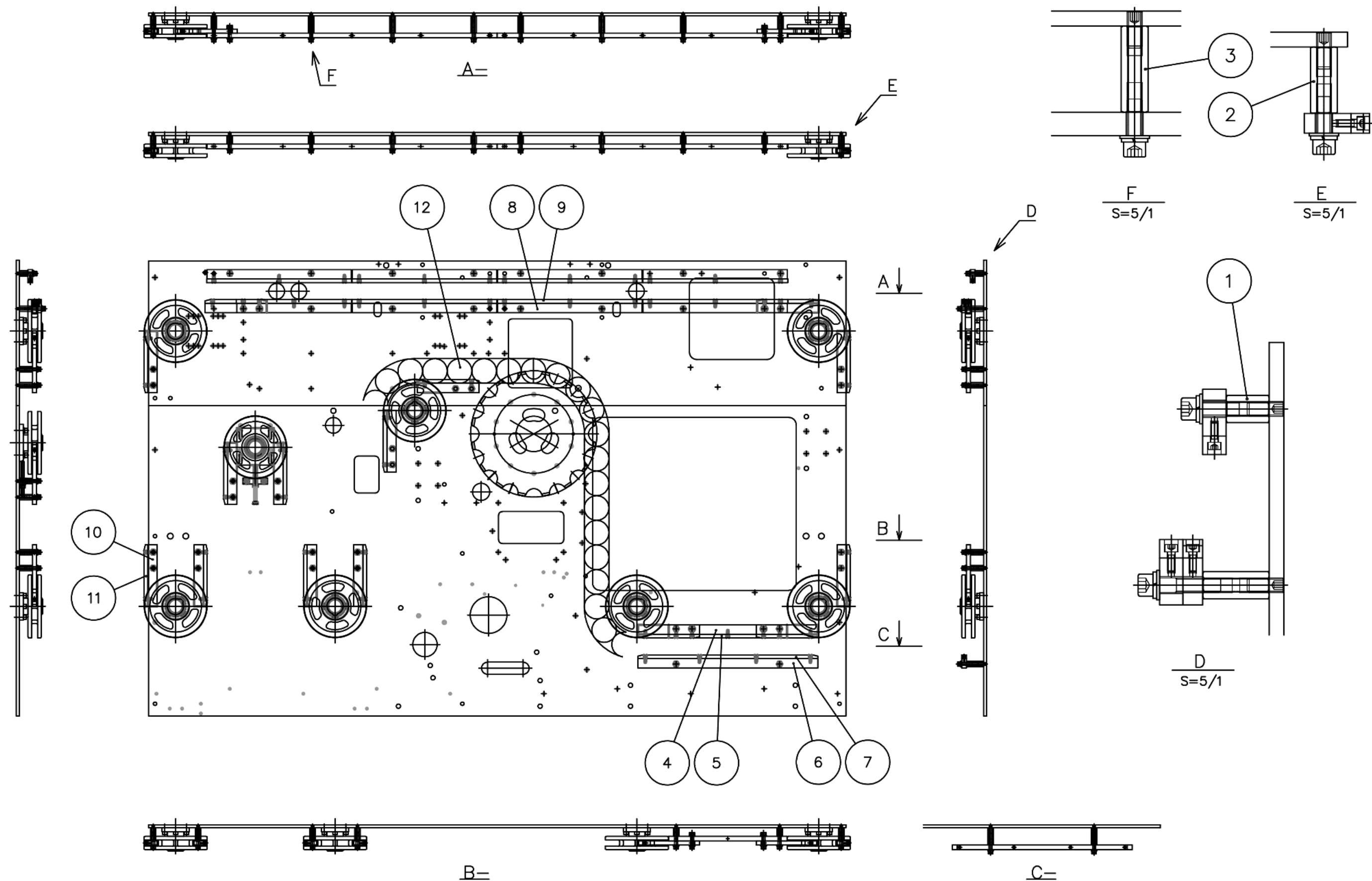


Installation

**AH450021A Idle Pulley Unit**

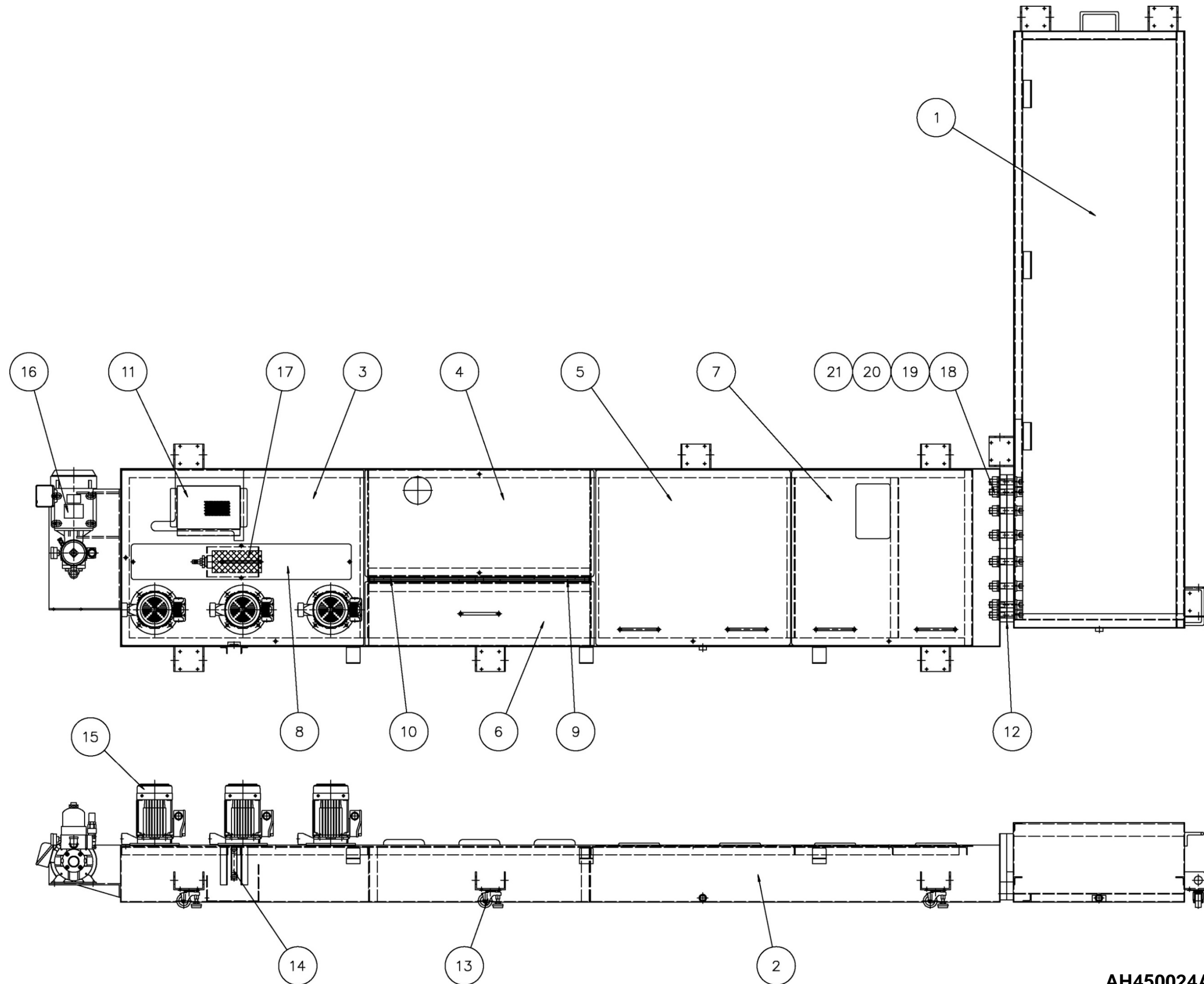




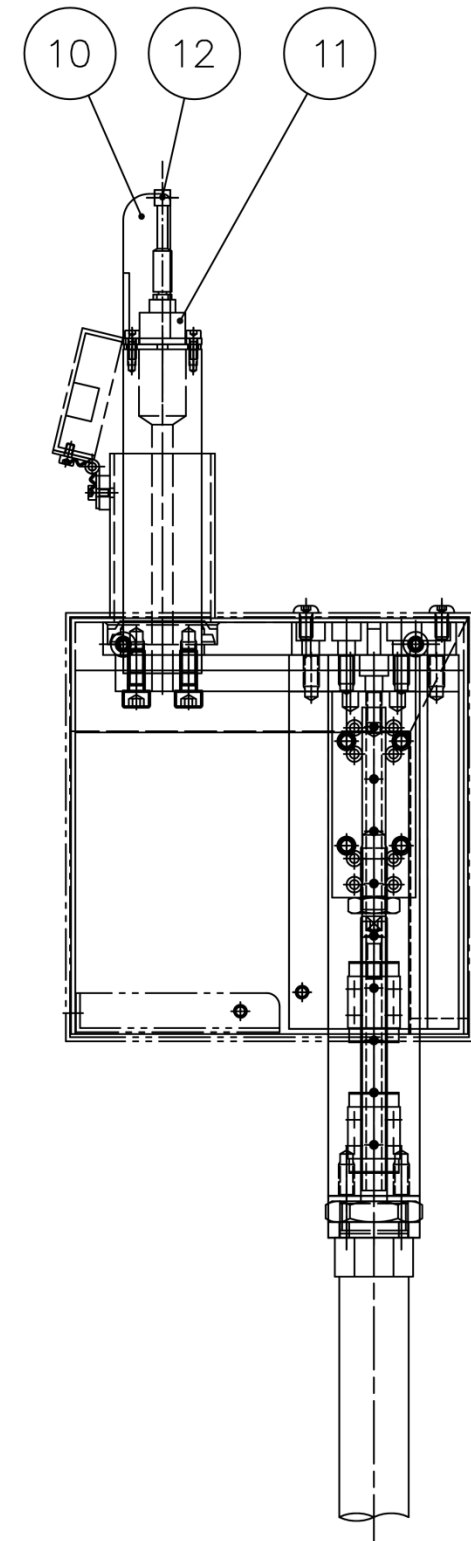
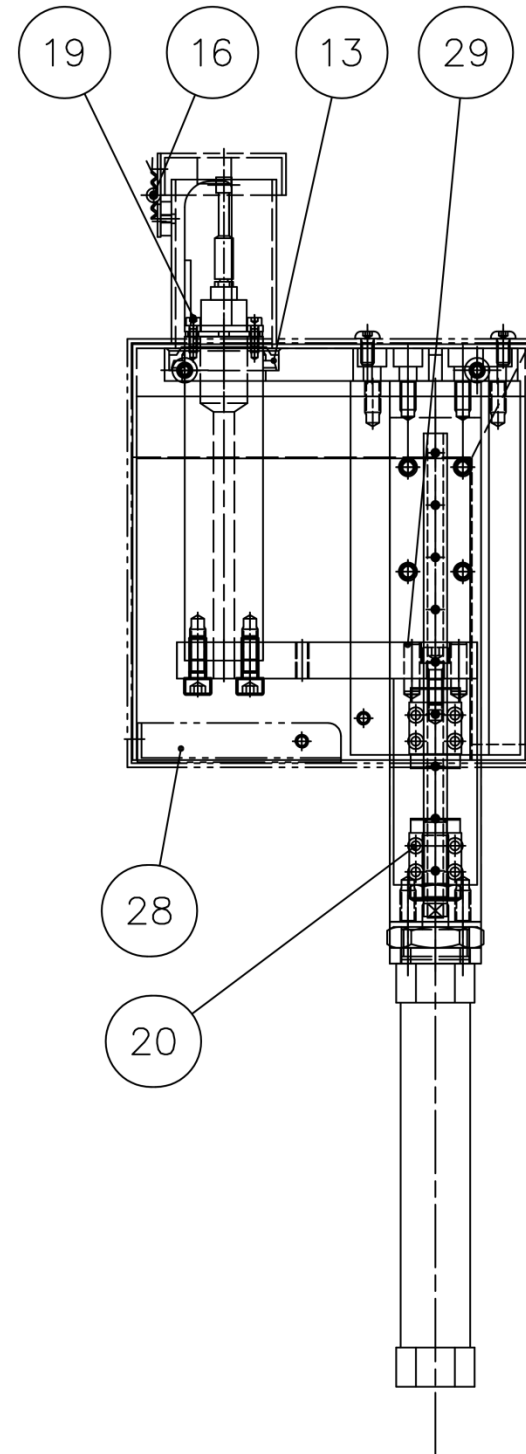
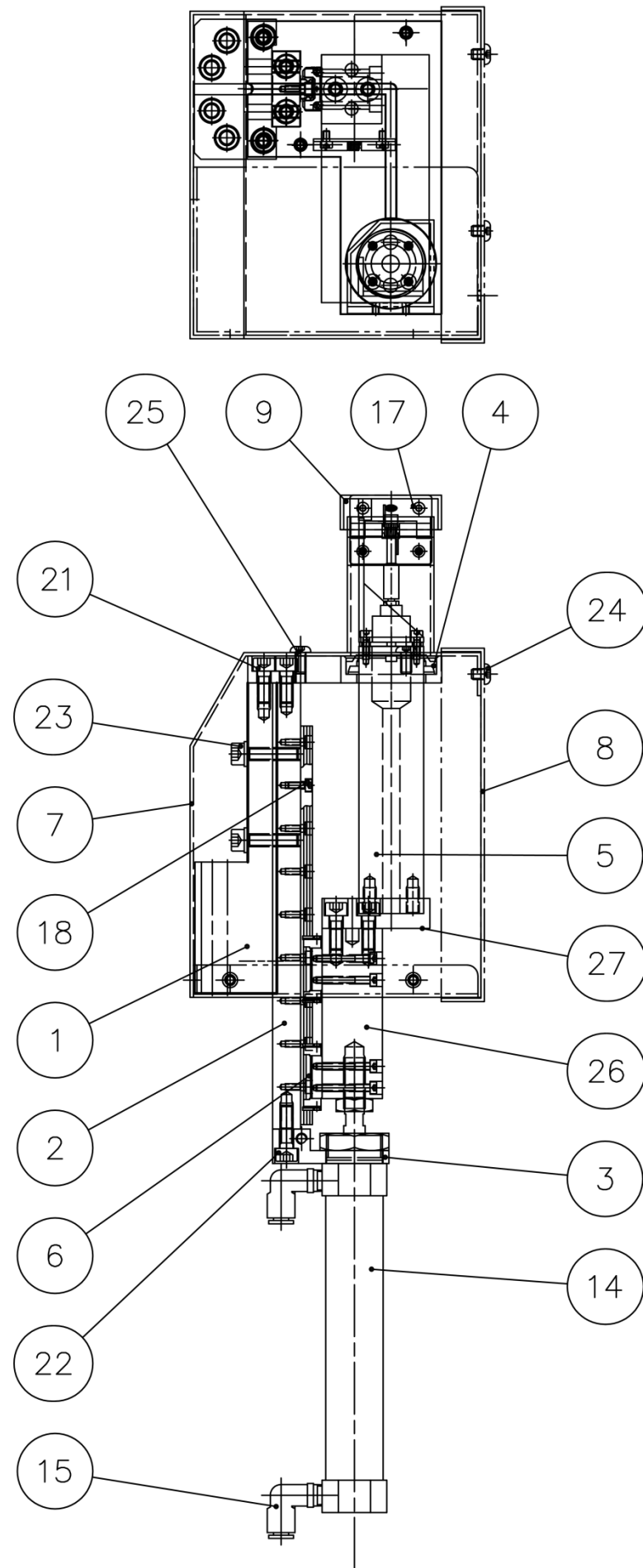


**AH450023B1**  
**ATC120 Chain Guide and Tool Pot**

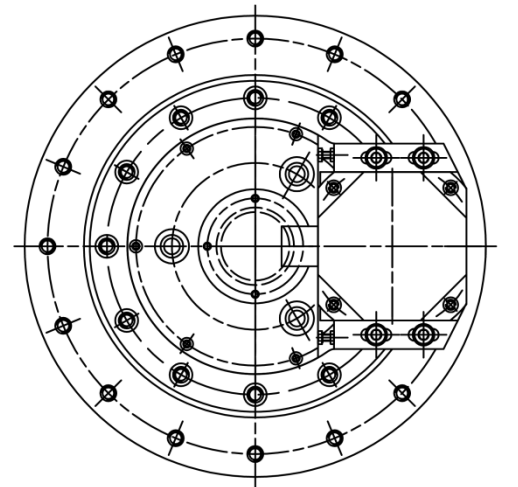
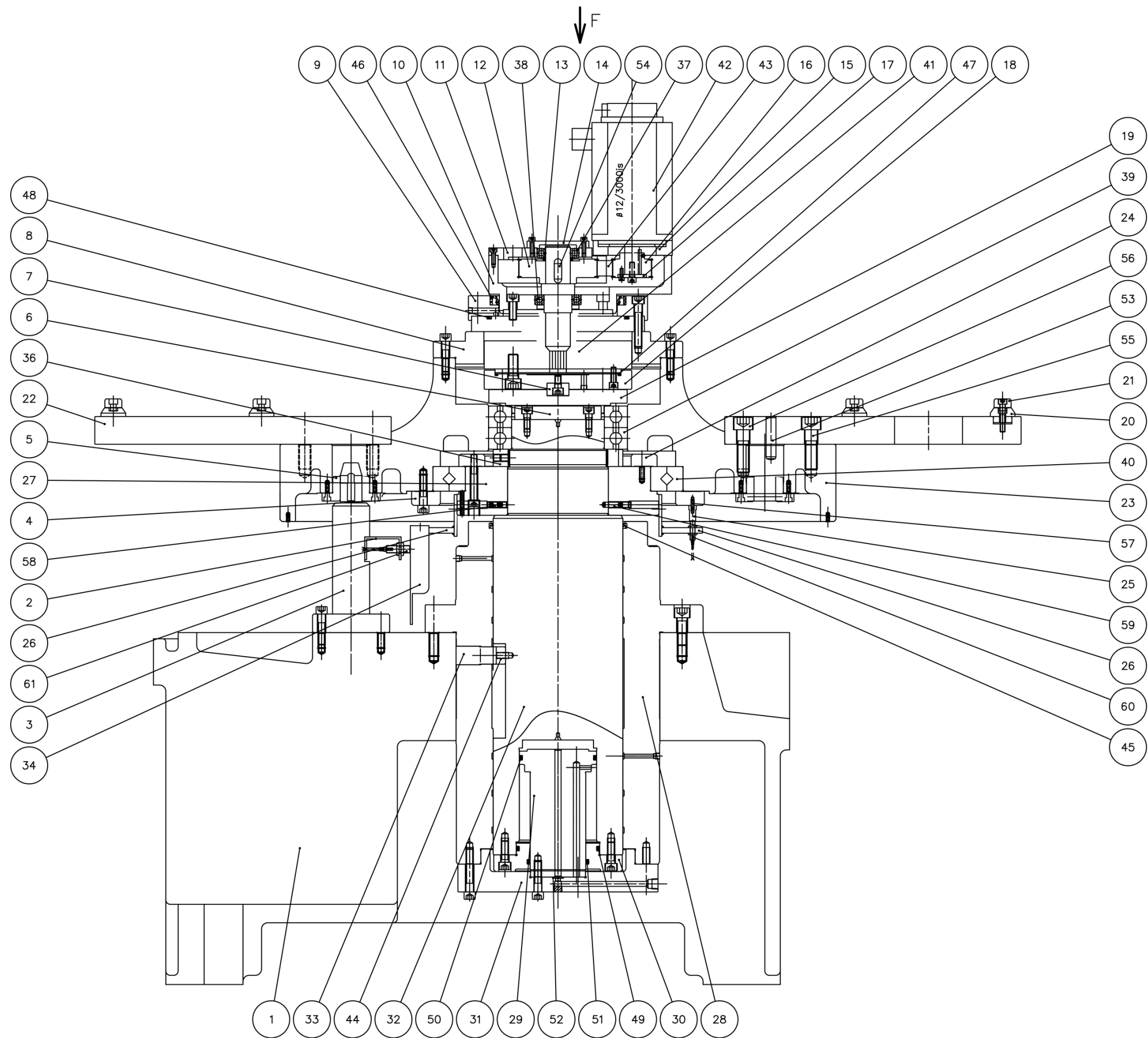




**AH450024A Coolant Tank**

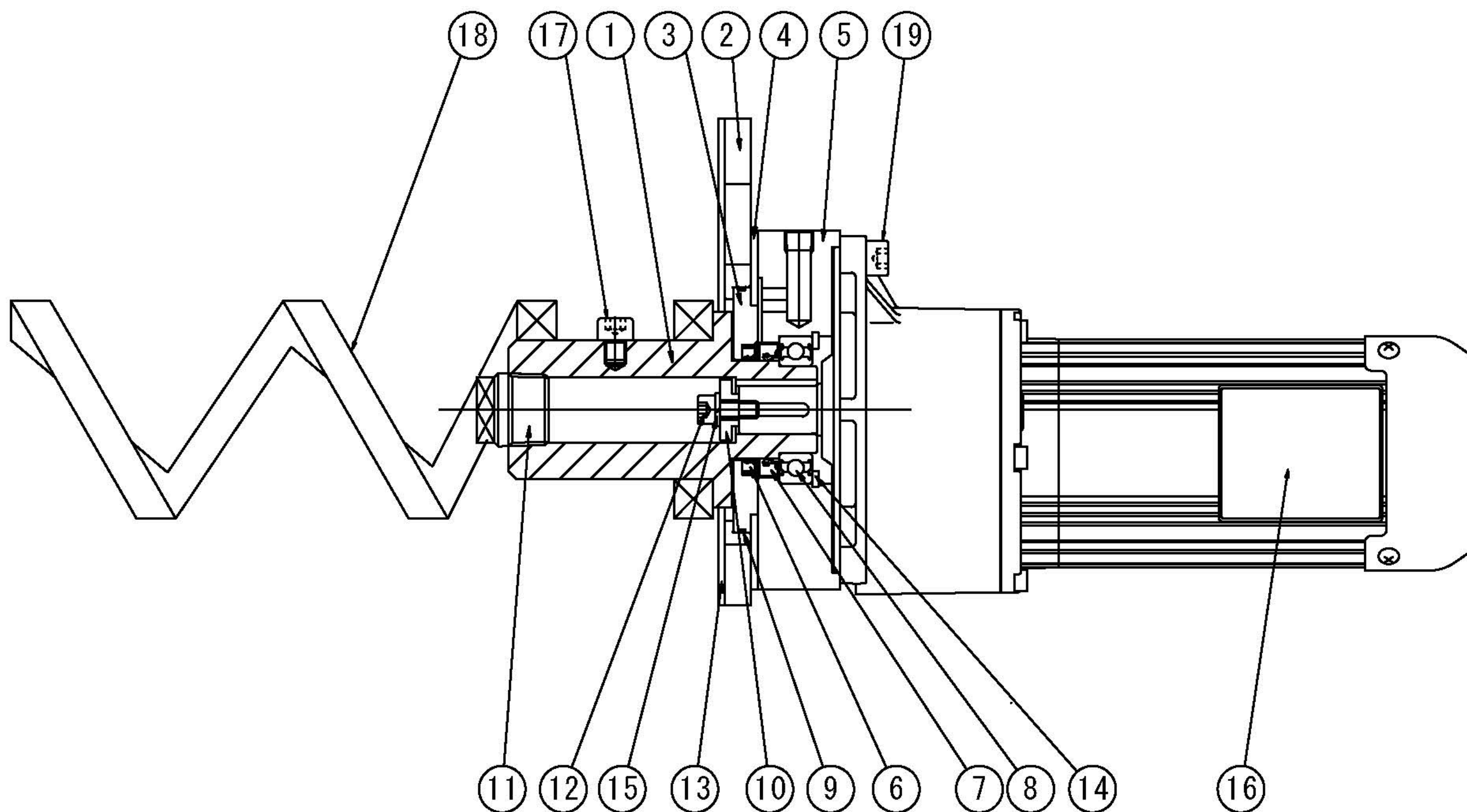


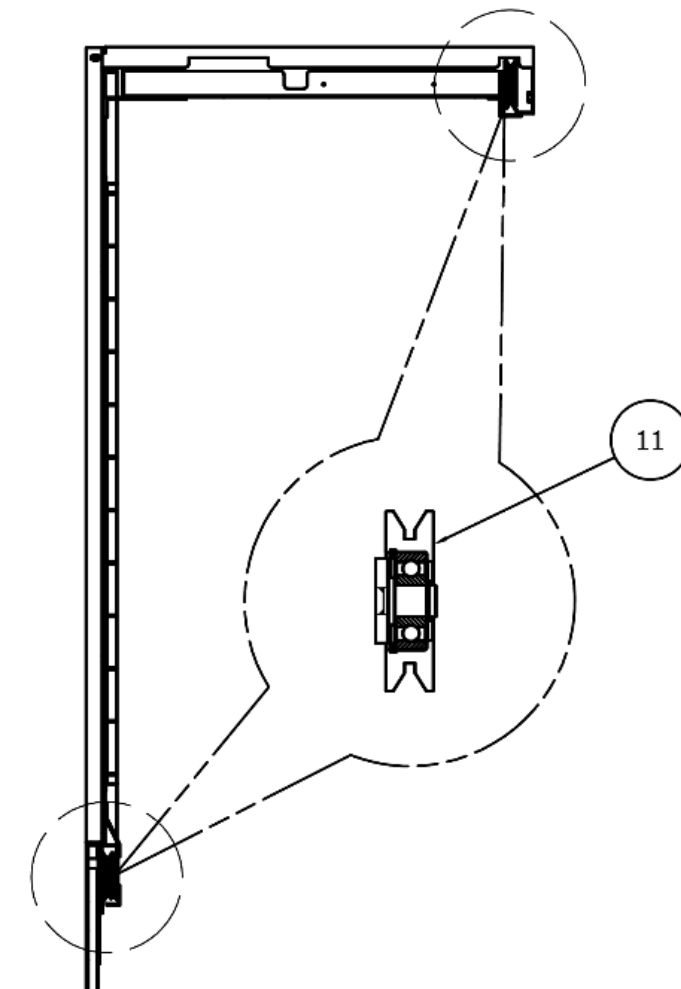
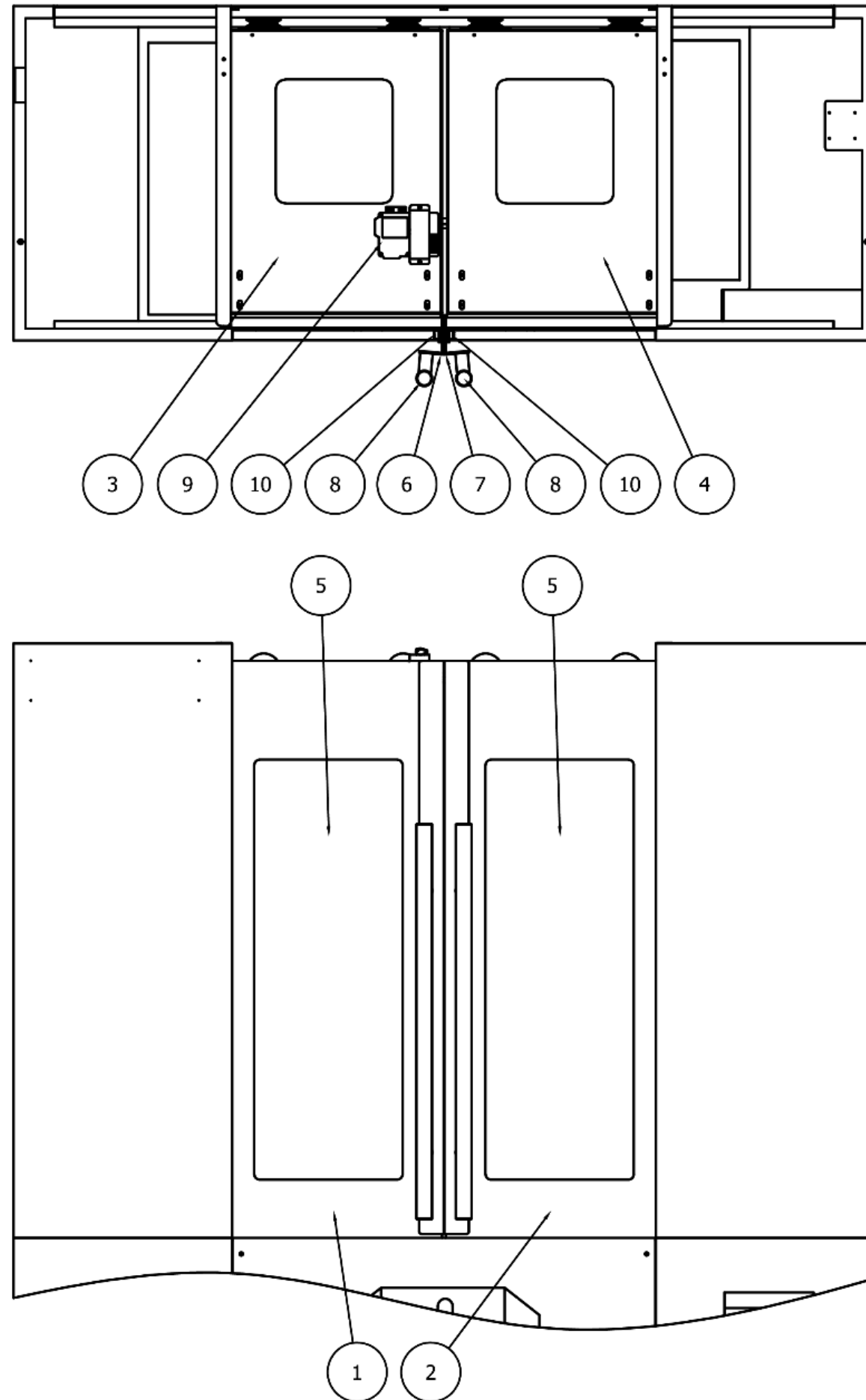
**AH450025B0**  
**Pop-up Type MARPOSS**



VIEW F

**AH450028B0 6APC**





**AH450051A0 Front Door**

